

THE  
*Pathway to Knowledge.*

Conteyning certaine briefe Tables of  
English waights, and Measures, with the propor-  
tions, kindes, and numbers belonging properly  
vnto the same.

How to cast accompt with Counters, and with  
Pen, both in whole, and broken numbers.

With the Rules of Cossicke, Surd, Binomicall, &  
Residuell Numbers, and the Rule of Equa-  
tion, or of Algebere, with diuers exam-  
ples for the working of the same.

Whereunto is annexed a most excellent Inuenti-  
on of Iulius Caesar Patauinus, for the buying  
and selling of all kinde of Marchandise.

And lastly the order of keeping of a Marchants  
booke, after the Italian manner, by Debitor  
and Creditor, with an Instruction to  
lead you to the same.

All more briefly done, then any heretofore hath  
been set foorth.

Together with a Table in the beginning of the  
booke, where you may finde the principall  
matters conteyned in the same.

Written in Dutch, and translated into  
English, by W. P.

Printed at London for William Barley, and  
are to be sould at his shop at the vpper  
end of Gracious street. 1595.



To the right honorable sir Stephen  
*Slany Knight, Lord Maior of*  
the honorable Citie of London,  
and to his Right worshipfull Bre-  
thren the Aldermen of the same.



Lthough (Right honorable and  
worshipfull) dyuers heretofore  
haue spared nether labor nor time  
to publish books of Arithmetike,  
wherby at this present many copies are extant,  
so it may seme superfluous to reiterate the same,  
yet seing in al ages men haue not ceased to write  
their iudgements vpon all arts, for the the better  
and more euident expositions, as being very re-  
quisite to giue more light vnto the studious. I  
thought it neither impertinent nor vnnecessarie  
to translate this work out of Dutch into our mo-  
ther tong, for two causes, the one for the better  
instruction of the common wealth, as being a  
work both commedable & worthy the reading,  
such as for qualitie, and copiousnes of matter, in  
so small a volume hath not heretofore byn pub-  
lished. The other for that we are all bound as  
much as in vs lieth to aduaunce and further the  
common wealth: which considered being de-

## *The epistle.*

siours to imploy that smal talent it hath pleased  
god to bestow vpon me to the same end, I haue  
ventured to publish it & to dedicate it vnto your  
honour and worships, that by your good pro-  
tections it may the better be shrewded from the  
vaine and curious coniectures of vaine and cu-  
rious men, and vnder the same be more accep-  
ted in the common wealth; May it therefore  
please your Honour & worships to receiue the  
worke as a gift of a poore member of this hono-  
rable citie, whose abilitie, if it were other, wold  
aford some greater matter, wherein if it shal please  
you to vouchsafe your fauours, I shall think my  
labour well imployed, and with all reuerence be  
thankfull. And so beseeching God, that this  
small matter may worke a great effect, to the be-  
nefit of the common wealth. I commit you to  
the protection of almightie God, whome I be-  
seech to blesse, preserue, and keepe you in all  
ioy, and prosperous estate, to his glory, the pro-  
fit of the common wealth, & your own good.

**Your Honours and worships,**  
*in all dutie.*

**W. P.**

# The table.

<b>H</b> ow to make ballance for even waight, in leafe	A.
What sorts of waights are vsed in England and what difference are in them, leafe	A. 2.
To waigh a great waight with few waights, in leafe	A. 4.
A distriktion of measures, in leafe	B. 1.
The waight of wooll, and cheese, leafe	B. 1.
The measure of caske, for salmon, and elles, leafe	B. 1.
The measure of beere, and ale caske, leafe	B. 2.
The measures of land for length, leafe	B. 2.
The measure of land for breadth, in leafe	B. 3.
The number or contents of the caske of Ling, Codd, Habberdine, and Stockfishe, leafe	B. 3.
The quantitie of Freezes as they are sould, with skinnes, Parchment, and paper, in leafe	B. 3.
The measure of Timber, leafe	B. 4.
Measures by line or rule, for land, timber, glasse, & bords.	C. 1.
Measure of wine, oyle, and honye, leafe	D. 1.
Measure of graine, leafe	D. 1.
The waight of Butter, and Cheese, and of their emptie caske, leafe	D. 2.
The measure of salt, leafe	D. 2.
The waights of Iron, and Lead, leafe	D. 2.
The number & measure containd in herring barrels, L.	D. 2.
The length & bidgnesse of billets, fagots, & tallwood, L.	D. 3.
The measures of sakes of cooles, leafe	D. 3.
The length, breadth, and waight of kerfies, & cottons, L.	D. 3.
The files of narrow clothes, leafe	D. 4.
The sizes of broad clothes, leafe	D. 4.
The measure of Freeze and Rugg, of Lanke shire, Manchester. cotton, and Welsh Freeze, leafe	A. 1.
A breife table of the parts of times, leafe	A. 2.
Numeration, leafe	A. 3.
The manner of casting accompt with Counters, leafe	B. 1.
A table of multiplication, to be learned by hart, leafe	B. 3.
Addition with the pen, leafe	C. 1.

## *The table.*

Subtraction, leaf	C. 1.
Multiplication, leaf	C. 2.
Diuision, leaf	C. 3.
The rule of three, leaf	D. 1.
To take vp the parts of any diuision left, leaf	D. 3.
To take vp broken numbers, & reduce them into small somms, leaf	D. 3.
Broken numbers, in leaf	D. 4.
To find the partes of broken partes, leaf	E. 1.
The rule of three in broken numbers, leaf	E. 1.
A short instruction shewing the parts of pounds, by shillings, & pence, leaf	E. 1.
The partes of shillings, by pence, leaf	E. 2.
Howe to bring pence into poundes, at the first working by the rule of practise, leaf	E. 4.
Questions of the rule of three, wrought by practise, leaf	F. 1.
The backe rule of three, leaf	G. 1.
Questions of profit and losse, leaf	H. 1.
Questions of exchange, leaf	H. 3.
The sortes of moneys, in each countrey, leaf	I. 2.
Questions of carrying Merchandizes by land, leaf	I. 2.
The rule of felowshipp, leaf	I. 4.
Questions of barter, leaf	L. 2.
The rule of allegation, leaf	N. 1.
The rules of false positions, leaf	N. 4.
The rule of Ceries or Verginum, leaf	P. 2.
The characters and figurers of Cossike numbers, leaf	P. 4.
To find the square roote of any number, leaf	P. 4.
To extract a cubicke roote, leaf	Q. 1.
Addition in Cossike numbers, leaf	Q. 2.
Subtraction of the same, leaf	Q. 3.
Multiplication of the same, leaf	Q. 4.
Deuision of the same, leaf	Q. 4.
Addition in Cossike broken numbers, leaf	Q. 4.
Subtraction, multiplication, & deuision of the same, L.	R. 1.
The 4 kindes of surd numbers, leaf	R. 1.

## *The table.*

Subtraction or Extraction of surd numbers, leafe	—R. 3.
Multiplication and Diuision of the same, leafe	—R. 4.
Addition in bynomicall or residuall numbers, leafe	—R. 4.
Subtraction and multiplication of the same, leafe	—S. 1.
Diuision of the same, leafe	—S. 2.
To extract the square root out of residuall numbers, leafe	—S. 3.
Equation or the rule of Algeber the first part, leafe	—S. 3.
The second part, leafe	—S. 3.
The third and fourth part, leafe	—S. 4.
Reduction of the rule of Algeber, leafe	—T. 2.
Examples of the first equation, leafe	—T. 2.
Certaine questiōs of the same rule out of Simon Iacob, L.	—X. 3.
A newe and excellent inuention of buying and selling al sorts of Merchandizes, deuised by Iulius Cæsar Patavinus, L.	—✱ 1.
An instruction to teach the order of keeping a merchants booke, leafe	—✱. 2.
The Iornall or dayes booke marked letter A. leafe	—Y. 1.
The leager letter A. leafe	—Z. 3.
The register of the booke letter A. leafe	—Z. 4.
The booke of charges, for the trade of merchandize, L.	—Cc 4.
The leager of the newe booke, letter B. leafe	—D d 2.
The register of the same, leafe	—D d 3.

*The end of the table.*

1840

Received of the Treasurer of the  
County of [illegible] the sum of [illegible]  
for [illegible]

the sum of [illegible] Dollars  
and [illegible] Cents

for [illegible]

in full for [illegible]

the sum of [illegible] Dollars  
and [illegible] Cents

for [illegible]

in full for [illegible]

the sum of [illegible] Dollars  
and [illegible] Cents

for [illegible]

in full for [illegible]

the sum of [illegible] Dollars  
and [illegible] Cents

for [illegible]

**Briefe tables of vsuall English waights  
and Measures : wherein doth appeare what proportion they  
beare oneto another in their kinde , with certaine  
tearmes and assizes of waight, measure,  
and number , belonging properly  
to some things.**

**Also a Table of parts of time, not vnfitte for  
any man that dealeth with accompts of  
all sorts.**



**W**aight and measure are things necessary and commodious in the common trade of life , as there are few I suppose that will not acknowledge the benefit of them. And besides their daily vse in common matters they are means to finde out certaine rare secrets, such as to manye might seeme impossible . As to giue the number of Inches solid, contained in any bodie of Mettall, stone, or wood, what forme soeuer it beareth, regular or irregular, yea though it were in similitude of a ragged Rocke , or of some Beast, Birde, orbranche of tree , and to decerne the true waight of part of any thing bodely and entire substance , without seperating that part from the whole . And to knowe the content of hidden hollownesse if any there were , in some massie peece or pillar of mettall. Also to shew the iust weight of anye thing in the water, yea of a ship with all her furniture and tackling if neede require, with many such like conclusions, which although they fall within the limmits of number, be not vsuall in matters of accompts, and therefore I omitte them at this time, purposing but onely to make bryefe mention of the parties and proportions of waights measures, and time, whence most rates in reckoning take, their originall.

**A**

**Ballance**



## Ballance and Scales.

**B**Ecause the true Waight of most things are most redely and truely to be decerned by helpe of Ballance and Scales, it shall be fitte, first to shewe in what proportion they ought to be made which is in this manner. The beame of any conuenient length as best shall like you, the tongue or point halfe so long as the beame, and standing by right in the middest, equidistant from both the endes: the extree thre square and straight, sette at right angles in the middest of the beame, so that it may alwayes beare vpon the edge when the Ballance shal be charged, the cheekes very straight, and somewhat longer then the tongue, with a pendant point in the middest betweene them, the plates of equall waight, the cordes of like bignes, equall in length to the whole beame, whatsoeuer els is to be required touching the exact worke-manship, the same resteth in the Artificer to perfoyme.





## Waights.

**N**ext unto Ballance are Waights by course, and those be of five severall sorts: namely, Tower, Troy, Haberderepows, Subtill waight, and Foyle waight: all which as they be of severall quantities, so are their uses sunder.

The pound tower hath bin the usuall pound for mintage, and in the names of his divisions, is like unto the pound Troy, but in quantitie lesse, for 16 pounds Tower, make but 15 pounds Troy waight.

The pound Troy is greater then the pound Tower, by 1/16 of a pound troy, and lesse then the pound Haberderepows, by ounces Troy, for of a pound Troy, hereby is waighed wheat, and bread, gold, silver, jewels and precious stones.

The pound Haberderepows is greater then the pound Troy yet is the ounce lesse, because the pound Troy hath but 12 ounces, and the pound Haberderepows 16, by this waight is waighed all phisicall drugges and grocerie, all grosse wares, as Rosin, ware, pitch, tarre, tallow, sope, hemise, flax, &c. all base mettals, and minerals, as iron, Steele, lead, tinne, copper, alome, copperas, &c.



The



### The pounds Subtill.

**T**He poundes Subtill, so tearmed for that in small quantitie it maye bee made ratable to represent anye other greater waight whatsoeuer, as foure penny waight Troy, or lesse to answere in due proportion vnto the whole pound Troye, with all his partes, euery parte sensible and seuerally to bee handled: This waight is priuate, to assaye Maisters and such as can make triall of minerals, and not knowne to many other, neither is there any vse thereof, in ordinarie accompts.



### The Pound Foile.

**T**He pound Foile is lesse then the pound Troy  $\frac{1}{2}$  by part of the pound troy, and hath small vse save onely amongst those that make gould foile, wyer and Werles.

Of these waights, the pound Troy, and Haber:  
depoise, are most generall, for which  
cause I haue onely noted  
their deuisions as  
including the  
rest.



# Troye Waight.

The pound Troy, is deuided into 12 ounces, euey ounce 20 penny waight, and euey penny waight 24 graines, as in this Table.

Graines.	5760	2880	1440	960	480	240	120	60	24	12	6	3	2	1
Penny waight	240	120	60	40	20	10	5	2½	1½	¾				
Ounces.	12	6	3	2	1	½	¼							
Pound,	1	½	¼											

Graines troy,	5760	2880	1440	480	240	220	200	180	140	120	100	80	60	40	20	160
Graines.	6456	1728	834	288	144	132	120	108	84	72	60	48	36	24	12	96
Carct.	288	144	72	24	12	11	10	9	7	6	5	4	3	2	1	8
Unnces.	12	6	3	1												
Pound,	1															

A Marke waight containeth 8 ounces, which terme is sometime vfed in accounts of silver.

# Proportions of Ounces, to ounces Haberdupois.

Troy.	9 $\frac{1}{16}$	10	8 $\frac{5}{8}$	9	7 $\frac{1}{2}$	8	6 $\frac{1}{2}$	7	5 $\frac{1}{2}$	6	4 $\frac{1}{2}$	5	3 $\frac{5}{8}$	4	2 $\frac{3}{4}$	3	1 $\frac{15}{16}$	2	1
Haberdupois.	10	11 $\frac{1}{3}$	9	9 $\frac{1}{2}$	8	8 $\frac{2}{3}$	7	7 $\frac{1}{2}$	6	6 $\frac{1}{2}$	5	5 $\frac{1}{2}$	4	4 $\frac{1}{2}$	3	3 $\frac{1}{2}$	2	2 $\frac{1}{2}$	1
Troy.	90 $\frac{1}{8}$	100	81 $\frac{1}{6}$	90	72 $\frac{1}{2}$	80	62 $\frac{1}{2}$	70	54 $\frac{1}{2}$	60	45 $\frac{1}{2}$	50	36 $\frac{1}{2}$	40	27 $\frac{1}{2}$	30	18 $\frac{1}{2}$	20	
Haberdupois.	100	100 $\frac{1}{2}$	90	99 $\frac{1}{2}$	80	88 $\frac{1}{2}$	70	77 $\frac{1}{2}$	60	66 $\frac{1}{2}$	50	55 $\frac{1}{2}$	40	44 $\frac{1}{2}$	30	33 $\frac{1}{2}$	20	22 $\frac{1}{2}$	

# Proportions of pounds Troy, to poundes Haberdupois.

Troy.	12 $\frac{1}{2}$	10	10 $\frac{1}{2}$	9	9 $\frac{1}{2}$	8	8 $\frac{11}{24}$	7	7 $\frac{1}{2}$	6	6 $\frac{1}{2}$	5	4 $\frac{1}{2}$	4	3 $\frac{1}{2}$	3	2 $\frac{1}{2}$	2	1 $\frac{1}{2}$
Haber.	10	8 $\frac{1}{2}$	9	7 $\frac{1}{2}$	8	6 $\frac{1}{2}$	7	5 $\frac{1}{2}$	9	4 $\frac{1}{2}$	5	6 $\frac{1}{2}$	4	3 $\frac{1}{2}$	3	2 $\frac{1}{2}$	2	1 $\frac{1}{2}$	1
Troy.	120 $\frac{1}{2}$	100	108 $\frac{1}{2}$	90	96 $\frac{1}{2}$	80	84 $\frac{1}{2}$	70	72 $\frac{1}{2}$	60	60 $\frac{1}{2}$	50	48 $\frac{1}{2}$	40	36 $\frac{1}{2}$	30	24 $\frac{1}{2}$	20	
Haber.	100	82 $\frac{1}{2}$	90	74 $\frac{1}{2}$	80	66 $\frac{1}{2}$	70	57 $\frac{1}{2}$	60	49 $\frac{1}{2}$	50	41 $\frac{1}{2}$	40	33 $\frac{1}{2}$	30	24 $\frac{1}{2}$	20	16 $\frac{1}{2}$	

# Maberdepois Waight.

The pound *Maberdepois* is parted into 16 ounces, euer ounce, 8 dragmes, euer dragme 3 scruples, euer scruple 20 graines.

℥ <sup>r</sup>	Graines.	7680	3840	1920	480	240	120	60	30	15	20	10	5
℥	Scruples.	384	192	96	24	12	6	3	1½	¾	7	¾	¾
℥	Dragmes.	128	64	32	8	4	2	7	¾	¾			
℥	Ounces.	16	8	4	1	½	¼						
℥ <sup>ss</sup>	Pound-ss.	1	½	¼									

Euer of these quantities is vsually exprest with his proper Character, here set in the margin,

Where be other Draughts of this kind of greater content as the

℥ pound yeth.  
℥<sup>ss</sup> half pound yeth.  
℥<sup>ss</sup> quarter.  
℥<sup>ss</sup> half quarter.

112	
56	
28	
14	



To waygh much with few waights.

You may waigh  
any number of  
pounds from

li. li.  
1 to 40, with these  
fewer waights.

1
3
9
27

li. li.  
1 to 121 with these  
five waightes.

1
3
9
27
81

1 to 364. with these  
six waightes.

1
3
9
27
81
243





### Measures.

**A**lthough the variety of Measures be great, and in manner infinite, yet are they all comprehended under three generall kindes, namely, Lines, Superficies and Bodies.

Lines which haue but onely length without breadth or thickness, doe measure heights, depthes, lengths, & breadths of things whatsoeuer.

Superficies are limited by lines, and beare both length and breadth, but no thickness, in this measure are giuen the contents of glasse, boordes, pauements, and land of all sorts.

Bodies are bounden by Superficies, and containe both length, breadth, and thickness, these doe manifest as well the quantitie of all solid things, as timber, stone and such like, as also the content of Containers of euery kinde.



# V Vol.

Poundes.	4368	364	182	28	14	7
Claues or nailes	624	52	26	4	2	1
Stones.	312	26	12	2	1	
Todds.	156	12	6 $\frac{1}{2}$	1		
Wayes.	24	2	1			
Sackes.	12	1				
Last.	1					

## Cheese.

Pounds.	256	128	64	8
Cloves.	32	16	8	1
Weye.	1	$\frac{1}{2}$	$\frac{1}{4}$	

## Measure.

### Salmons and Eles.

Gallons.	504	84	42	21	10 $\frac{1}{2}$
Firkins.	48	8	4	2	1
Halfe Barrels.	24	4	2	1	
Barrels.	12	2	1		
Butts.	6	1			
Last.	1				



Bodies,  
Concaue Measures,  
Beere.

Pintes	288	144	72	8	4	2
Quartes.	144	72	36	4	2	1
Pottles.	72	36	18	2	1	
Gallons.	36	18	9	1		
Firkins.	4	2	1			
Kilderkins or halfe Barrells	2	1				
Barrells.	1					

Ale.

Pintes.	256	128	64	8	4	2
Quartes.	128	64	32	4	2	1
Pottles.	64	32	16	2	1	
Gallons.	32	16	8	1		
Firkins.	4	2	1			
Kilderkins or halfe Barrells.	2	1				
Barrells.	1					

# Superfices

## Quantities of Land.

This rate certaine is set downe, that 40 Perches in length, and 4 in breadth, must make an

Acre of land, or 80 in length, and 2 in breadth, or els 160 in length

& 1 in breadth, whereby appeareth that always the

acre containeth 160

square Perches.

Square Perches.	16000	8000	6400	4800	3200	1600	800	640	480	320	160	80	40	20	10	4
Daies Worke.	4000	2000	1600	1200	800	400	200	160	120	80	40	20	10	5	2½	1
Quarter Roodes.	1600	800	640	480	320	160	80	64	48	32	16	8	4	2	1	
Halfe Roodes.	800	400	320	240	160	80	40	32	24	16	8	4	2	1		
Roodes.	400	200	160	120	80	40	20	16	12	8	4	2	1			
Halfe Acres.	200	100	80	60	40	20	10	8	6	4	2	1				
Acres.	100	50	40	30	20	10	5	4	3	2	1					

001 10484 100534 1006060



Superfices.

Quantities of Lande.

	Square quarters of Feet	Square Feete.	Square yardes	Square Perches
Perch containeth	4356	272 $\frac{1}{4}$	30 $\frac{1}{4}$	1
Dales worke containeth	174240	1089	121	4
Rood containeth	174240	10890	1210	40
Halfe acre containeth	348480	21780	2420	80
Acre containeth	696960	43560	4840	160

One



Number onely.

Fish.

Linge.  
Codd of Haberdine.  
Stockfish.

{ 124  
120 }

to the hundzeth.

Firres.

Sables.  
Harterns.  
Winks.  
Tenits.  
Filches.  
Grays.

40 Skinnes  
the Timber.

Skins of Lether tanned.

Goates the kippe, 50.  
Calnes the dosen, 12.

Conny.  
Kidd.  
Lambe  
Budg.  
Cattie.

Five scoze the  
Hundzed.

Sheepe. } the hundzed  
Lambs. } fivescoze.

Hides, 200 10  
Dicars, 20 1  
Last, 1

Paper.

Sheets.	5000	500	25
Quier.	200	20	1
Reame	10	11	
Bale.	1		

Parchment.

Skinne.	60	12
Dosen.	5	1
Rowle.	1	





Bodies,

Timber and Stone,

Sides.	Squares	Cubes.	Sides.	Squares.	Cubes.
1	1	1	16	254	4096
2	4	8	17	289	4913
3	9	27	18	324	5832
4	16	64	19	361	6859
5	25	125	20	400	8000
6	36	216	21	441	9261
7	49	343	22	484	10648
8	64	512	23	529	12167
9	81	729	24	576	13824
10	100	1000	25	625	15625
11	121	1331	26	676	17576
12	144	1728	27	729	19683
13	169	2197	28	784	21952
14	196	2744	29	841	24389
15	225	3375	30	900	27000

These may be understood of Inches, Feet, or Yards.

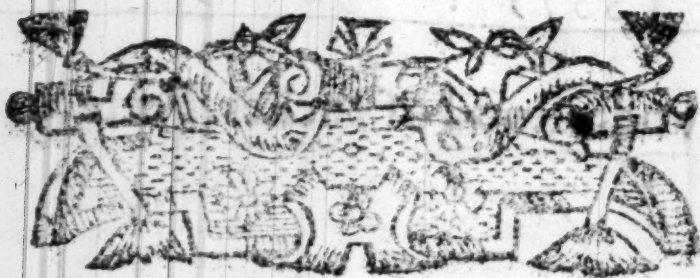


Bodies.

Concaue Measures.

Ale

Pintes.	256	128	64	8	4	2
Quartes	128	64	32	4	2	1
Pottles	64	32	16	2	1	
Gallons.	32	16	8	1		
Firkins.	4	2	1			
Kilderkins or halfe Barrells	2	1				
Barrelles.	1					



30  
Fu  
M

22	21
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9484	441
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Quantities of like kinde.





W. P. Adams

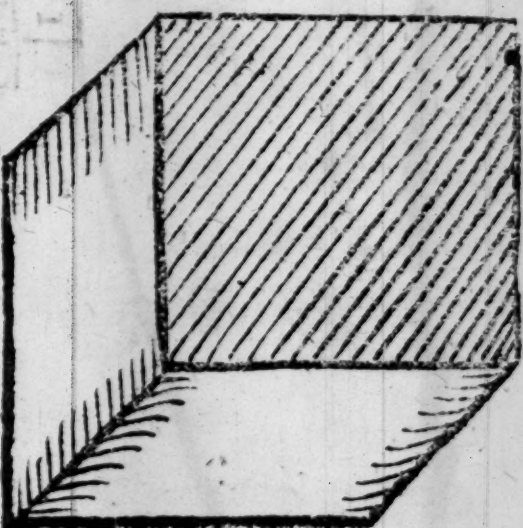
# Bodies.

The Inch Solid.

Concaue Measure,

Wine Oyle and Honey.

Eight pound Troy waight of wine makes one Gallon, wherby are measured all sorts of vessels for Ale, Wine, Oile & Honey.



Pinte.	2016	1008	672	504	336	252	128	84	21
Quarte.	1008	504	336	252	168	126	64	42	11
Pottle.	504	252	168	126	84	63	36	21	
Gallon.	252	126	84	63	42	31½	18	11	
Kundler.	14	7	4½	3½	2½	1½	1		
Barrels.	8	4	2½	2	1½	1			
Terce of a Pipe or Butt.	6	3	2	1½	1				
Hogsheeds.	4	2	1½	1					
Punchion or Tercian of a Tun.	3	1½	1						
Pipe or Butt.	2	1							
Tun.	1								



# Bodies,

Concaue or hollow Measures,

Graine,

Eight poundes 7 rox waight of wheate make one Gallon,  
whereby the other Measures are made.

Pintes,	5	1	2	0	2	5	6	0	5	1	2	2	5	6	1	2	8	6	4	3	2	1	6	8	4	2	1	11.
Quartes,	2	5	6	0	1	2	8	0	2	5	6	1	2	8	6	4	3	2	1	6	8	4	2	1				
Pottles,	1	2	8	0	6	4	0	1	2	8	6	4	3	2	1	6	8	4	2	1								
Gallons,	6	4	0	3	2	0	6	4	3	2	1	6	8	4	2	1												
Peckes,	3	2	0	1	6	0	3	2	1	6	8	4	2	1														
Eighteene Dells or halfe Butthells,	1	6	0	8	0	1	6	8	4	2	1																	
Butthells,	8	0	4	0	8	4	2	1																				
Strikes or halfe Coombes,	4	0	2	0	4	2	1																					
Cornoockes, Coombes or half Quarters,	2	0	1	0	1	2	1																					
Quarters or Seames,	1	0	5	1																								
Half,	1																											

Water measure the Butthell containeth 5 Pecks,

## Waight and Measure.

These measures be all one with Ale measures.

Butter and Sope.

Poundes in waight besides the Caske.

	224	212	56	Butt.
	240	120	60	Sope.
Firkin.	4	2	1	
Halfe Barrell,	2	1		
Barrell,	1			

The waight of the emptie Caske  
for Butter and Sope.

The

Firkin.	6 $\frac{1}{2}$
Cilderken or halfe Barrell.	13 H.
Barrell.	26

Sale.

Bushels. 420 40

Weye. 10 1

Hundredth. 1

Heereafter followeth the names of diuers thinges, which haue perticuler termes of reckoning proper to themselves according to their severall kinds, as some of waight only, some of measure alone, some of waight & measure, others of measure and number, and the rest of number by it selfe.

### Waight.

Iron.	Lead.	Tinne. Copper. Lattin.
Pound.   2240   112	Pound.   2184   112	pound.   112
Hundreth.   20   1	Hundreth.   19 $\frac{1}{2}$   1	Hund.   1
Tunne.   1	Fodder.   1	

### Number and Measure.

#### Herrings.

	20	1	$\frac{1}{10}$	Cades	red.
	24	2	$\frac{2}{3}$	Halfe Barr.	white.
	12	1	$\frac{1}{1}$	Barrells	
Herrings.	12000	1200	120	The Barrell, & halfe Barrell for Herrings are the same measure used for Ale.	
Hundreth.	10	100	1		
Thousands.	10	1	1		
Latt.	1				

All other Fish used to be Barrelled, haue 2 Barrells to the Laste.

And those Barrelled of the greater sorte, called Countable or tale Fish, ought to containe in length, from the bone of the Finne, to the third ioynt of the tayle 16 Inches at the least.

# Sides of Fuell,

Number of Inches about notches or with in a fore of markes,	
1	16
2	23
3	28
4	33
5	38

and 4 feet long be-  
side the Carfe,

Names,	Inches about,
a Single.	7½
a Cast.	10
a Cast of two.	14

& 3 foote long.

Fagots the band about / inches and the length 3 feet.  
besides the knot 24

Coales the facke, 4 Bushels.



# Carries.

	Length yardes.	Bredth yardes.	Waight poundes
Carries called oz. betweenne 16 and dinarie the Peece.	27 wett.	1	19
The Lopting Carrie.	betweenne 17 and 18 wett.	1	22
The Denshire Carrie.	betweenne 12 and 13 wett.	$1\frac{1}{4}$	1 Severy parde.
The cheicke Car- rie and the Straite.	betweenne 17 and 18 wett	1 wett	24

# Cottons.

A Lancashire cotton.	21 oz 20 goads.	$\frac{3}{4}$ with in the lists.	21
A Good of welsh cot.	$1\frac{1}{2}$	$\frac{3}{4}$ wett.	$1\frac{1}{8}$
Cuep yacoe of cot.	1	$\frac{3}{4}$	1
The cottē of Man- chester & Cheshir.	22 goads.	$\frac{3}{4}$ wett.	30

# Sizes of Cloth of all sortes

Narrow Cloth.	Length Yard.	Bredth Yard.	Waight. Pound.
Curry narrow Cloath of the same betweene 24 places or any other and 25 wett. of like sorte.		1	34
Every Nothzen Cloth.	betweene 23 and 25.	$1\frac{3}{4}$ wett	66
The halfe peece called Dolens.	Containeth the same bredth and halfe the same length & waight.		
The penitstone, or Forrest white.	betweene 12 and 13 wet.	$1\frac{1}{3}$	28
The white plaine Straight made in Denon. or Cozn.	12	1	12
White pinned Straits of the said places.	11	$\frac{3}{4}$	8

# Cloth of all sortes.

Broad Cloth,	Length. Yardcs.	Bredth. Yardcs.	Waight. Pounds.
Every White and Red made in Wiltshire, Glocester, and So- merfet Shire or els where, of like making, & al other Whites made in any part not before named.	betweene 26 and 28,	$1\frac{3}{4}$	61 white. 60 colored.
Cloath of Ray.	28, watered 24.	$1\frac{1}{2}$	
Every broad Plunket, a sure blewe, and other colored Cloath, made in Wiltshire, Glocest. and Somerst Shire, or els where, of like making.	between 25 & 28 wette.	$1\frac{3}{4}$	88
Every course Hoyt Cloth made in Suff. Norf. Essex, and els where of like sort, and every course ken- tish Cloth, not above sixe pound price.	between 23 & 25 wette.	$1\frac{1}{2}$	64
Every Broad-Cloth made in Taunton, Bridgwater, or els where of like sort.	between 22 & 23 wette.	$1\frac{3}{4}$	34

## Frise and Ruggs.

The Lancashire Frise and rugge	betweene 35 & 37	$\frac{3}{4}$	43
Manchester Frise and rugge	36	$\frac{3}{4}$ wet :	48
Welsh Frise	36 wet	$\frac{1}{4}$	48

Flannell,

Elles.

Euerie peece of Flannell vncertaine  $\frac{1}{2}$

**T**he reconing of time in times past, hath been diuersly kept, by some after the Sunne, by other according to the motion of the Moone: but at this day all our most men take their ground from the Sunne, acctning for a yeare, the time betweene his departure from one certaine point into the Zodiacke, (and coming thither againe) which is accomplished as y<sup>e</sup> Astronomers affirme in 365 dayes, and 6 howers wanting 10 minuts 44 seconds, howbeit making small accompt of so small a fraction, they vse in common calculations, to take yearly full 6 howers, adding those together untill the amount to one day, which is made vp every fourth yere, whē it is leape yere, which hath 366 daies, one day more thē any of the three yeares then past, and this od day is placed in Februarie, so hath that Moneth 29 days in that yere, where else it hath but 28. These minuts & seconds wherewith the 6 howers are made vp, doe amount for so many yeares as be past since the birth of our Saviour Christ

11 daies and 18 howers  $\frac{1}{2}$  which may dize our reckon-

ing of the season so much out of course, but this I

leave to the learned, holding it sufficient

for practise in auditors, facultie,

to know the differences

contayned in this

briefe table

following.

**A**

## Time.

### A brieftable of the parts of time.

Minut.	52500	262800	131400	40430	10080	1440	60
Howers.	8760	4380	2190	673 $\frac{5}{8}$	164	24	1
Dayes.	365	182 $\frac{1}{2}$	91 $\frac{1}{4}$	28 $\frac{1}{2}$	7	1	
Weekes.	52 $\frac{1}{7}$	26 $\frac{1}{4}$	13 $\frac{1}{8}$	4	1		
Moneths.	13 $\frac{1}{28}$	6 $\frac{29}{36}$	3 $\frac{29}{112}$	1			
Quarters.	4	2	1				
Halfe yeare.	2	1					
Yeare.	1						

A verse to keepe in memozie the number of daies in euery Moneth.

Thirtie daies hath September, Aprill, Iune, and Nouember.  
Febuarie eight and twentie alone, all the rest thirtie and one.

### Briefe rules of reckoning.

Quot tuo denarios, merces die quoque valebit,  
Tot libras mediasque libras, & dragmata tanta:  
Cum tot denariis, capies per quemlibet annum.

Dic quot quadrantes, tua septimana valebit,  
Tot solidos, tot denarios tuus annus habebit.

Looke how many pence each day thou shalt gaine,  
Iust so many pounds, halfe pounds and groates:  
with as many pence in a yeare certaine,  
Thou gettest and takest, as each wise man notes.

Looke how many farthings in the weeke doe amount.  
In the yeare like shillings, and pence thou shalt count.



## The Pathway to Knowledge.

**N**umeration sheweth the manner how each Number is to be named, and particularly written, whereunto belongeth 10 figures, whereof the nine first are effectuali, and serue for Numeration, but the Tenth being an 0 is called nothing, and as he standeth alone by himselfe, betokeneth nothing, but when it is placed before any other figure, then it maketh the same figure to betoken or signifie more then it properly importeth in it selfe. You must vnderstand, that each of the figures heereunder named, in the first place on the right hand doth signifie no more but his owne proper denomination, but in the second place being the left hand, it signifieth so many times ten, in the third place so many hundreds, and in the fourth place so many thousands, &c.

nought.	0	nought of himselfe.
nine.	9	ninety.
eight.	8	eight hundred.
seuen.	7	seuen thousand.
six.	6	sixscore thousand.
five.	5	five hundred thousand.
four.	4	four thousand times one thousand.
thre.	3	thre thousand times one thousand.
two.	2	two hundred thousand times one thousand.
one.	1	one thousand thousand times one thousand.

## The Pathway to Knowledge.

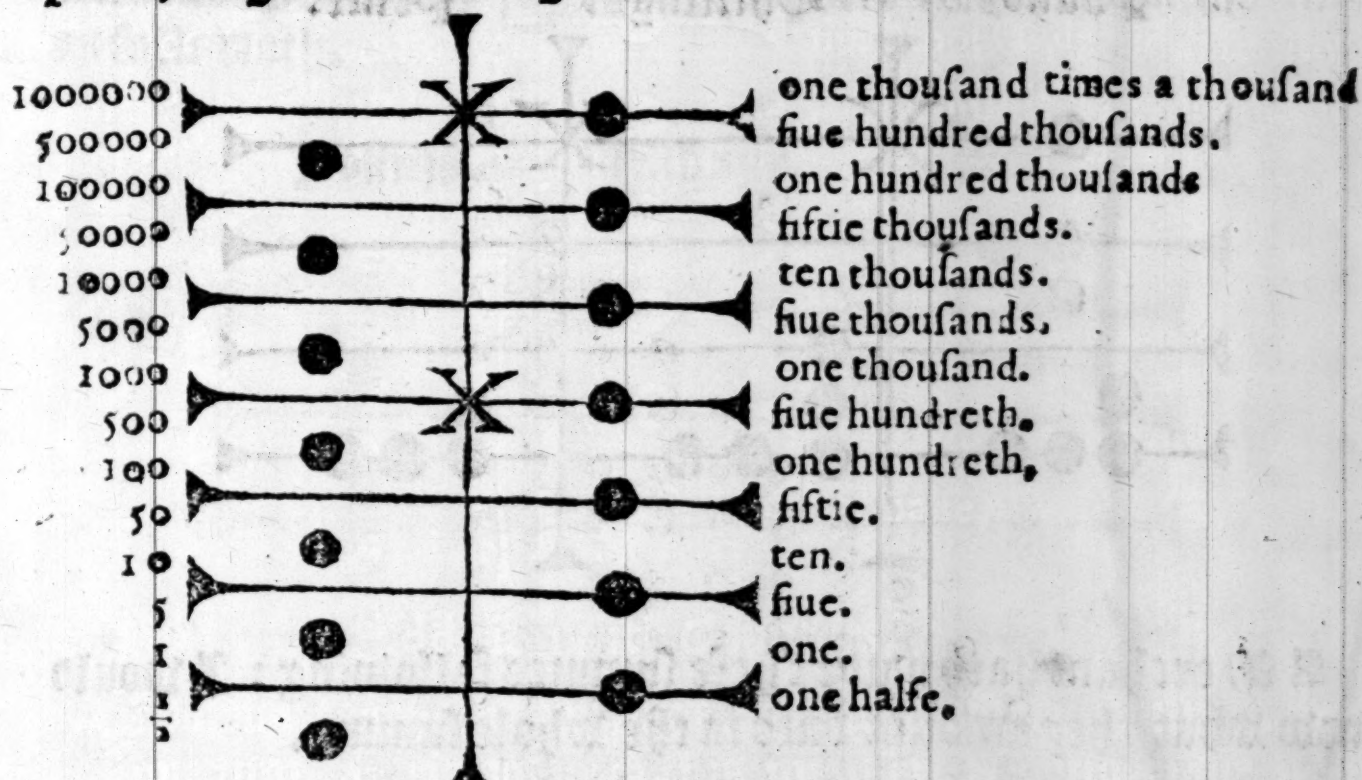
And when you desire to write a number without thousands, hundreds, tens, or one: then set the Cipher 0 before it, as if you would write Eight thousand and forty, then you must write it thus, 8040.

## Another order of Numeration.

9	8	7	6	5	4	3	2	1	0	one.
9	8	7	6	5	4	3	2	1	ten,	
9	8	7	6	5	4	3	2	1	a hundred,	
9	8	7	6	5	4	3	2	1	a thousand,	
9	8	7	6	5	4	3	2	1	ten thousand,	
9	8	7	6	5	4	3	2	1	one hundred thousand,	
9	8	7	6	5	4	3	2	1	one thousand times a thousand,	
9	8	7	6	5	4	3	2	1	ten thousand times a thousand,	
9	8	7	6	5	4	3	2	1	one hundred thousand times a thousand,	
9	8	7	6	5	4	3	2	1	one thousand times a thousand,	
9	8	7	6	5	4	3	2	1	one thousand times a thousand,	

The manner of casting account with counters, and first how to place and know your lines.

The first line betokeneth one, the second ten, the third one hundred, the fourth one thousand, &c. and every space betwene two lines, betokeneth halfe so much as the line which standeth about it, for the better understanding thereof, looke vpon the figure following.



### Addition with Counters.

Addition teacheth to bring and collect diuers summes into one sum, and is doone in this manner. Deuide your lines into three parts, and in the first part lay your pounds, in the second your shillings, & in the third your pence: reckon your pence 12 to a shilling, and twentie shillings to a pound, and as often as you finde six pence in one line, take them vp and lay one counter in the next line aboue that which betokeneth six pence, and so in others: where you finde five shillings in one line, take them vp and lay one counter in the next space or line aboue that, which signifieth five shillings, the like you must doe for ten shillings, and so with the pounds, &c.

### An example.

A Merchant hath receiued these parcels following, I would know what they amount vnto altogether.

£

Pounds.

# The Pathway to Knowledge.

Pounds.

Shillings.

24  
38  
426  
978

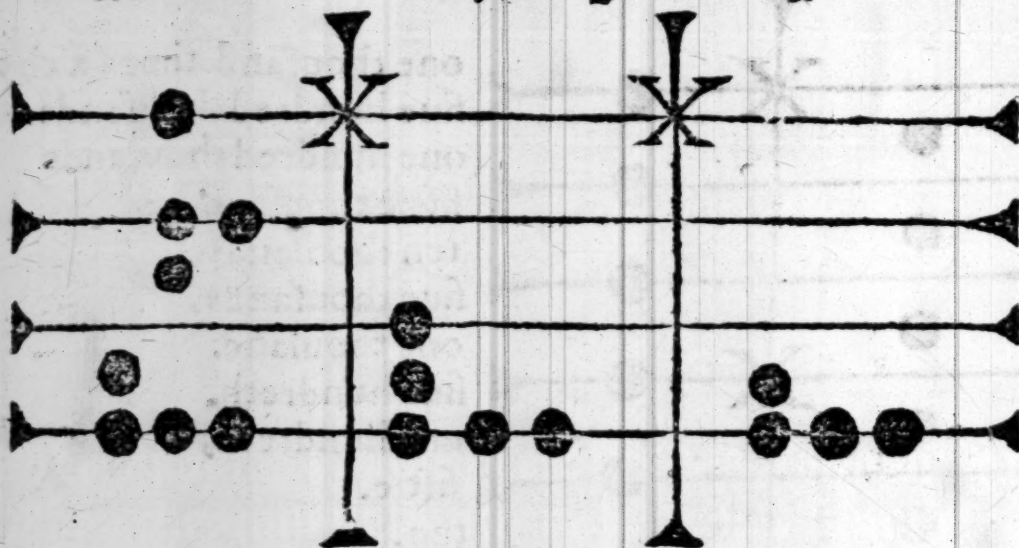
18 3  
17 0  
12 10  
8

Which make in all 1258 pounds, 18 shillings, and nine pence, which in Counters must be thus laide.

Pounds.

Shillings.

Pence.



A Merchant hath paide these summes following: I would know what they amount unto in the whole summe.

Poundes.

Shillings.

Pence.

60  
126  
235  
357

00  
18  
10  
11

01  
00  
08  
07

Which make in all 780 pounds, 00 shillings, and foure penes, which you must lay in the same order as before.

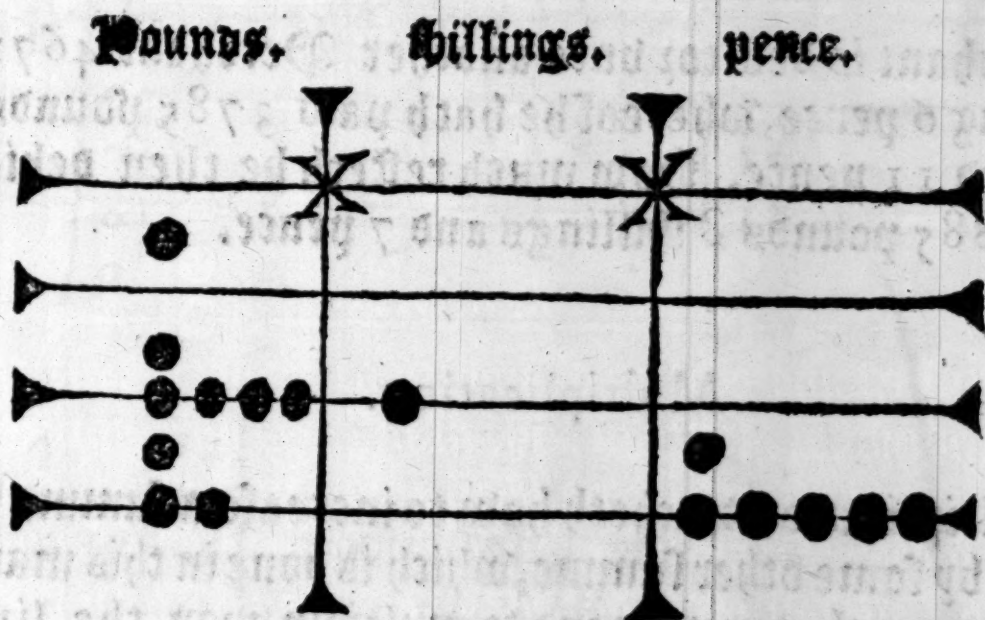
## Subtraction.

Subtraction teacheth how to take one sum out of the other and is done in this manner, lay the summe (out of the which you meane to subtract) upon the lines as is afore specified: and then take out of it the summe which you meane to subtract from the same: and where your lower denomination is greater then your upper, so that you cannot subtract it out, then take

by a shilling, and lay it in pence, in the line of pence, and so subtract, or els take by a pound, and lay it in shillings, vpon the line of shillings, and subtract as neede requireth.

An example.

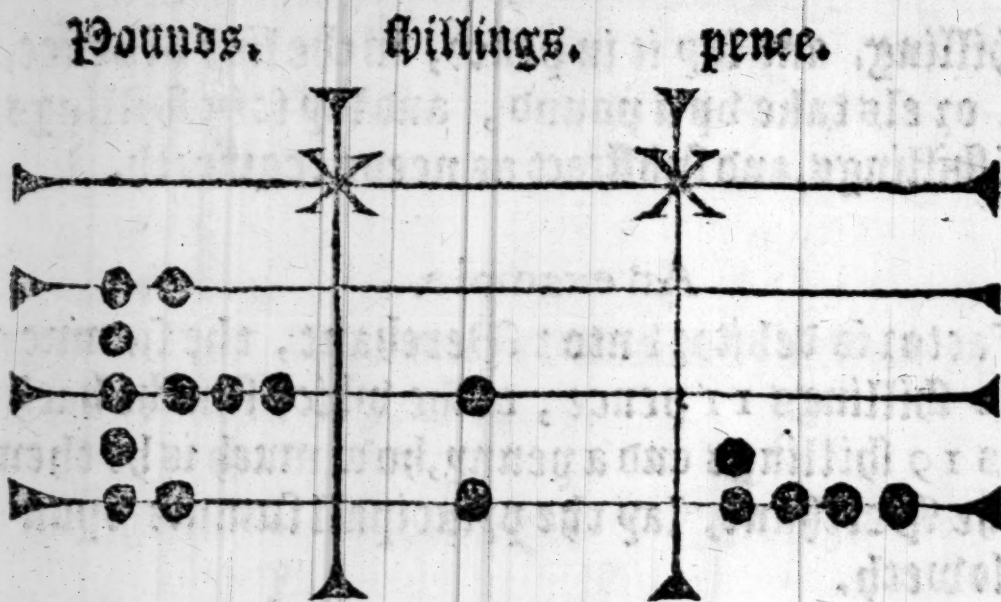
**A** Factor is debitor vnto a Merchant, the summe of 597 li. 10 shillings 11 pence, of the which sum he hath paid 299 pounds 19 shillings and a penny, how much is he then indebted vnto the Merchant, lay the principall summe vpon the lines as followeth.



From the which you must subtract the paiment as followeth.



There resteth to pay the summe which followeth



A merchant is debitor unto another Merchant 4671 pounds 1 shilling 6 pence, whereof he hath paid 3785 pounds 12 shillings and 11 pence. How much resteth he then debitor, answer, 885 pounds 8 shillings and 7 pence.

### Multiplication.

**M**ultiplication teacheth how to increase a summe by it selfe or by some other summe, which is done in this manner. Lay your summe that you meane to multiply vpon the lines, and write the number where with you meane to multiply vpon a paper, and begin at the line where your counters are, and lay your denominated multiplicator so often downe, as there are counters found vpon the line, and where but one counter is found in one space, then stay your finger there, and lay downe but the halfe of the same number, this doe, when you multiply but with one figure, but whē you multiply with 2 figures, then tell so many lines vponwards, and lay the figure (which is first on the left hand) as often downe, as there lyeth counters vpon the line which you multiply, then take away your finger, and lay the other figure as often downe, and tell vponwards againe, and so must you doe till you haue multiplied all the summe. In the same sort must you doe with 3. 4 or more figures, withall you must vnderstand that euery line which is touched with the finger, signifieth no more then one, the space vnder it one halfe, but the space aboue it five, the next line aboue that 10, and so rising

raising, as before is set downe: but when you take away your  
finger, the lines signifie as much as they were before.

# A table of Multiplication, which must be learned by heart.

1	1	2	4
2	2	3	6
3	3	4	8
4	4	5	10
5	5	6	12
6	6	7	14
7	7	8	16
8	8	9	18
9	9		

3	9	4	16
4	12	5	20
5	15	6	24
6	18	7	28
7	21	8	32
8	24	9	36
9	27		

5	52	6	36
6	30	7	42
7	35	8	48
8	40	9	54
9	45		

7	49	8	64
8	56	9	72
9	63		

9	81	10	100
10	100		

Mul

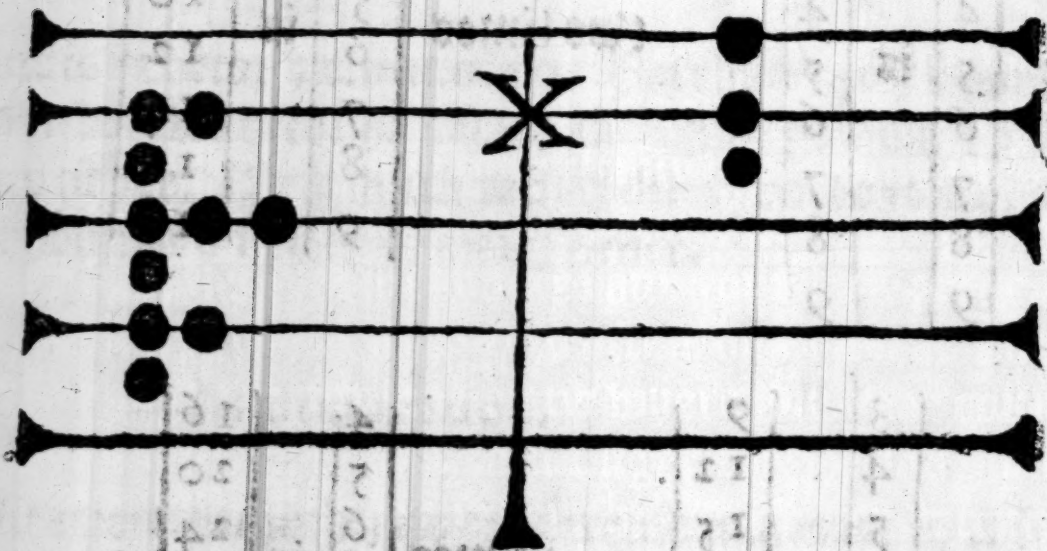
# The Pathway to Knowledge

## Multiplication by one figure

2875 times	4	is	11500
	5		14375
	6		17250
	7		20125
	8		23000
	9		25875

This number is multiplied by 4.

It maketh thus much.



An example with two figures.

3849 times	45	is	254205
	60		338940
	72		406728
	87		491463
	94		531006

An example with three figures.

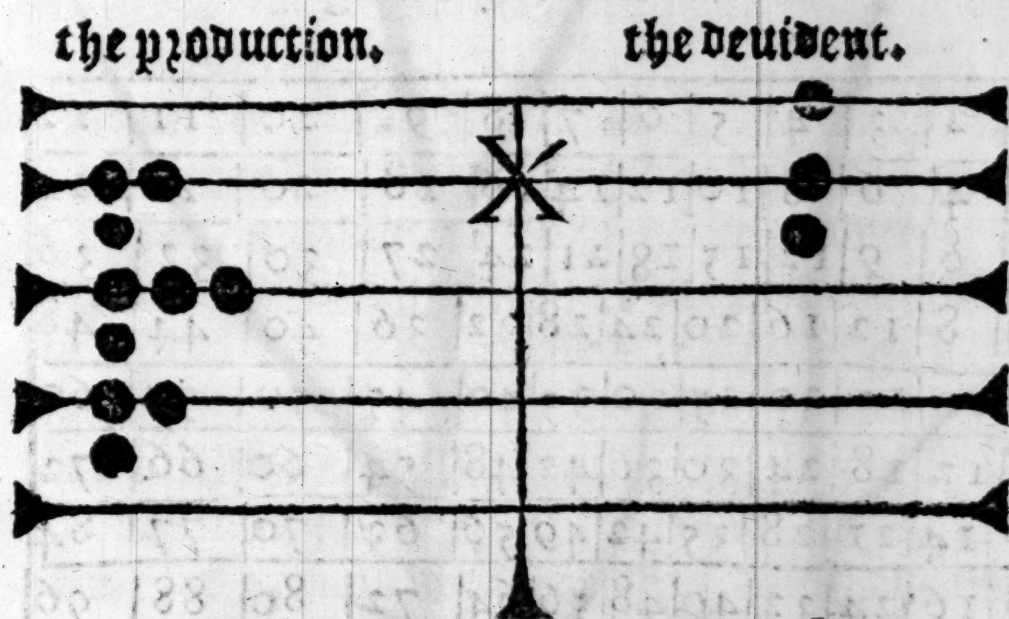
375 times	104	is	91000
	246		215250
	398		348250
	765		669375
	999		865375

Diuision.

**D**iuision teacheth how to seperate or deuide one number from it selfe, or by other numbers, and is done in this manner.

## The Pathway to Knowledge.

Lay the summe that you will deuide vpon the lines, and write downe the number where with you will deuide, and hold your finger vpon the highest line where the counters lies, and take the deuisor out, as you can, and lay downe so many Counters, but if you cannot take the deuisor out of the denominator, then take the halfe thereof, ( if you can doe it ) and lay one counter in the space vnder your finger, then take your finger away, and doe as I saide vnto the last line, but if you deuide with two figures, then first take (from the highest line where your counters lye) the figure of the deuisors, on the left hand as often as you can, yea, although you may take the other figure (vpon the which your finger lyeth,) as often out, and lay downe as many counters as you haue taken the deuisors out of the sayd summe, and if deuiding with two figures you cannot bring it to an euen summe, then take the halfe of the first figure, and pull away your finger, and then take the halfe of the second figure also, & lay a counter in the space which is next vnder your finger, the like must you doe with 3, 4 or moze figures.



Diuision with one figure.

Deuide	11500	by	4	maketh 2875 pound.
	14375		5	
	17250		6	
	20125		7	
	23000		8	
	25875		9	

An example with two figures.

$$\begin{array}{r|l} \text{Deuide} & \begin{array}{l} 254205 \\ 338940 \\ 406728 \\ 491463 \\ 531006 \end{array} \\ \hline & \end{array} \quad \text{by} \quad \begin{array}{l} 45 \\ 60 \\ 72 \\ 87 \\ 94 \end{array} \quad \text{maketh } 5649.$$

An example with three figures.

$$\begin{array}{r|l} \text{Deuide} & \begin{array}{l} 91000 \\ 215250 \\ 348250 \\ 669375 \\ 865375 \end{array} \\ \hline & \end{array} \quad \text{by} \quad \begin{array}{l} 105 \\ 246 \\ 398 \\ 765 \\ 989 \end{array} \quad \text{maketh } 877 \text{ pounds.}$$

The manner how to cast account with penne, by figures, and first beginneth the table of Numeration made by *Pithagoras*.

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

Addition

# The Pathvay to knowvledge.

## Addition.

**A**Ddition serueth to gather and bring together diuers and different summes into one, setting the one summe right vnder the other, and beginning to adde from the right hand vnto the left, as the examples following shew you at large.

To adde 457, to 683, set the one figure right vnder the other, in such sorte that not any one of the figures do stand farther out then other either towards the right or left hand, as 3 vnder 7, 8 vnder 5, and 6 vnder 4: saying 3 and 7 make 10, for the which 20, make an 0 right vnder 3 and 7, and keepe one in your memorie, which one you must adde with 8 and 5, and they make 14, for the which 14 make a figure of 4 vnder the line by the 0, towards the left hand, and keepe 1 in your memozy, which 1 you must adde vnto 6 and 4, and they make 11, which 11 you must set wholly downe on the left hand by the 4, and they make

$$\begin{array}{r} 457 \\ 683 \\ \hline 1140 \end{array}$$

Also to adde 433 l. 00 s, and 3 d. with 379 l. 16 s. 10 d. set the summes one right vnder the other, and every kinde of money vnder the same kinde: then begin to adde the 10 and the 3 pence together, and they make 13 pence, which is one shilling and a pennie, the which penny you must set vnder the lines, right vnder the 0 and 3, and adde the shilling with the other 16 shillings, which maketh 17 shillings, which 17 shillings you must set right vnder the lines in the place of shillings, then adde 9 pound with 3 pound, and they make 12 pound, of the which 12 pound, set 2 pound vnder the lines, and keepe one in your memorie, which 1 you must adde vnto 7 and 3, which maketh 11, of the which 11, set 1 vnder the lines by the figure 2, and keepe 1 in your memorie, which adde vnto 3 and 4, and they make 8, which you shall set vnder the lines by the 1, and they make

	l	s	d
433		0	3
379		16	10
812		17	1

# The Pathway to knowledge.

l s d	l s d	l s d	l s d
567 14 0	356 13 0	94 3 5	347 19 7
359 18 0	897 10 0	701 17 8	895 16 2
765 12 0	506 15 0	320 13 10	1207 11 3
1693 4 0	1760 18 0	8963 15 6	3896 13 1
		10080 10 5	6348 00 1
l	l	l s d	l s d
3678	6297	4298 16 5	5460 08 00
9765	5186	3176 18 11	4213 16 11
4321	3403	5267 16 1	3109 10 11
7968	1212	6070 10 11	2346 00 00
4532	3456	3210 19 10	.. 79 8 6
8612	2701	2176 17 10	. 543 00 0
7321	4329	5089 12 9	3276 4 3
1768	2018	3216 00 7	4390 4 6
49965	28602	32507 13 4	23418 13 1

## Subtraction.

**S**ubtraction teacheth how to take one summe out of the other alwaies setting the smallest summes vnder the greatest, and beginning to subtract from the right hand to the left.

A Merchant is debitor 452 pound, and hath paide in part of payment thereof, the summe of 168 pound, how much resteth yet to pay of the debt. Answer. Set the 168 pound, vnder the 452 pound, and take 8 out of 2 which cannot be done: wherefore you must borrow one out of the five, which in the first place is 10, and say 8 out of 12 resteth 4, which 4 set vnder the line, and adde the 1 which you borrowed vnto the next figure which is 6, and it maketh 7, which you must take out of 5, and that you cannot doe: wherefore you must borrow one of the 4, which is likewise in this second place 10 and then say: 7 out of 15, there resteth 8, which 8 you must set vnder the line by the figure 4 on the left hand, and adde the 1 which you borrowed vnto the figure of 1, and they make 2, which take out of 4, and there resteth 2 which you must likewise set vnder the line by the 8 on the left hand, and the rest is

$$\begin{array}{r} 452 \\ 168 \\ \hline 284 \end{array}$$

Likewise to subtract 298 pound, 11 shillings, 0 pence, out of

432

## The Pathvway to knowvledge.

432 pound, 4 Shillings 6 pence. Set your summes as I said before, that is the smallest summe vnder the greatest, and each kinde of money vnder his like, and begin to substract on the right hand, at the pence: saying 0 out of 6, there resteth still 6 pence, which set vnder the line, in the place of pence. Then take 11 shillings out of 4, but that cannot be done, therefore borrow a pound (out of the pounds) which is 20 shillings, which adde vnto the 4 shillings, and it maketh 24 shillings, out of the which taking the 11 shillings, there resteth 13 shillings, which you must set vnder the line, in the place of shillings, and then substract the pounds, as before is showane.

$$\begin{array}{r} 432 \text{ } 04 \text{ } 6 \\ 298 \text{ } 11 \text{ } 0 \\ \hline 133 \text{ } 13 \text{ } 6 \end{array}$$

### Substraction of money.

$$\begin{array}{r} \text{l} \text{ } s \text{ } d \\ 457 \text{ } 0 \text{ } 0 \\ 289 \text{ } 7 \text{ } 0 \\ \hline 167 \text{ } 13 \text{ } 0 \end{array}$$

$$\begin{array}{r} \text{l} \text{ } s \text{ } d \\ 578 \text{ } 10 \text{ } 0 \\ 209 \text{ } 4 \text{ } 2 \\ \hline 369 \text{ } 5 \text{ } 10 \end{array}$$

$$\begin{array}{r} \text{l} \text{ } s \text{ } d \\ 1283 \text{ } 16 \text{ } 8 \\ 397 \text{ } 17 \text{ } 5 \\ \hline 885 \text{ } 19 \text{ } 3 \end{array}$$

$$\begin{array}{r} \text{l} \text{ } s \text{ } d \\ 560 \text{ } 0 \text{ } 4 \\ 289 \text{ } 15 \text{ } 8 \\ \hline 180 \text{ } 04 \text{ } 8 \end{array}$$

### Substraction of waight.

$$\begin{array}{r} 95 \text{ C } 16 \text{ l } 4 \text{ oz.} \\ 63 \text{ C } 4 \text{ l } 2 \text{ oz.} \\ \hline 32 \text{ C } 12 \text{ l } 2 \text{ oz.} \end{array}$$

$$\begin{array}{r} 43 \text{ C } 3 \text{ q; } 14 \text{ l } 11 \text{ oz} \\ 36 \text{ C } 2 \text{ q; } 19 \text{ l } 12 \text{ oz} \\ \hline 7 \text{ C } 0 \text{ q; } 22 \text{ l } 15 \text{ oz} \end{array}$$

## Multiplication.

**M**ultiplication, teacheth how to multiplye or increase one summe within it selfe, or by an other, setting the least vnder, in such sort that not one figure on the right hand must passe beyond the other, except it be the 0. and begin from the right hand and go vnto the left, as in the examples following it appeareth. To multiplie 768 by 6, set the 6 vnder the 8, saying 6 times 8 is 48, whereof set the 8 vnder the line, & keepe the 4 in your memoire: then say, 6 times 6 is 36, which adde vnto the 4 you bare in memoire before, & it maketh 40, wherof set 0 vnder the line by the 8,

C 4.

and

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and keepe the 4 in your memory, then say 6 times 7 is 42, which added unto the 4 you bare in memory maketh 46, which set vnder the line at large, next vnto the 0 and it maketh

$$\begin{array}{r} 768 \\ 6 \\ \hline 4608 \end{array}$$

$$\begin{array}{r} 768 \\ 7 \\ \hline 5376 \end{array}$$

$$\begin{array}{r} 768 \\ 8 \\ \hline 6144 \end{array}$$

$$\begin{array}{r} 768 \\ 9 \\ \hline 6912 \end{array}$$

And if you will multiplie by two figures as it were by 36. then you must first multiplie by 6 as before, and then by 3, and set the production a figure inward, towards the left hand, then adde the 2 productions together, and the summe thereof is your demand. So must you doe with 3. 4. or more figures, setting the production of each figure a figure shorter, or inward of the former production towards the left hand: as in the example following you may perceiue.

768 36	768 48	768 79	768 69
4608	6144	6912	6912
2304	3072	5376	4608
27648	36864	60672	52992

$$\begin{array}{r} 9876 \\ 324 \\ \hline 39504 \\ 19752 \\ 25628 \\ \hline 3199824 \end{array}$$

$$\begin{array}{r} 9876 \\ 798 \\ \hline 79008 \\ 88884 \\ 69132 \\ \hline 7881048 \end{array}$$

$$\begin{array}{r} 9876 \\ 985 \\ \hline 49380 \\ 79008 \\ 88884 \\ \hline 9727860 \end{array}$$

Note.

When as there hapneth any number to be multiplied, by 10. 100. or a 1000. &c. you must set before the said number to be multiplied as many 0. as the multiplication hath before it, as if you would multiplie 8976 by 100, then set two 0 before the said summe and it maketh 897600.

Diuision,

# The Pathway to knowledge.

## Diuision.

**D**iuision teacheth to finde out how many times one number or summe is contained in the other, as if you would know how many times 6 is contained in 4608, set 6 vnder the 6 and say, how many times 6 in 46, and it maketh 7 times for 7 times 6 is 42, which take out of 46, and there resteth 4, which you must set ouer the 6, and then place the deuisor which is 6, one figure outwards towards the right hand, as vnder the 0, and say, how many times 6 in 40, it maketh 6 times, for 6 times 6 is 36, which take out of 40 resteth 4, which set ouer the 0 and then againe place the deuisor, a figure forwards vnder the 8, and say, how many times 6 in 48, it maketh 8 times, for 8 times 6 is 48, which take out of 48 there resteth nothing, and so the whole summe shall make 768.

$\begin{array}{r} 44 \\ 4608(768 \\ 666 \end{array}$	$\begin{array}{r} 48 \\ 5376(768 \\ 777 \end{array}$	$\begin{array}{r} 56 \\ 6144(768 \\ 888 \end{array}$	$\begin{array}{r} 67 \\ 6912(768 \\ 999 \end{array}$
--	--	--	--

Also to deuide 27648 by 36, then set 3 vnder 7, and 6 vnder 6, and take 3 out of 27, as many as you can, in such sort that there may rest as much more, as that you may take the 6 also out of the same number, as many times as you haue taken out the 3, which is 7 times, for if you say 7 times 3 is 21, from 27 resteth 6, which set aboue the figure of 7, and 6 times 7 is 42, from 66 resteth 24, and then place your deuisor which is 36, a figure farther towards the right hand, that is 3 vnder 24, and 6 vnder 4, & then proceed in your diuision and it will be 768. The like you must do with 3, 4, or more figures, as the examples following will declare.

$\begin{array}{r} 2 \\ 264 \\ 648 \\ 27648(768 \\ 3666 \\ 33 \end{array}$	$\begin{array}{r} 3 \\ 363 \\ 828 \\ 36864(768 \\ 4888 \\ 44 \end{array}$	$\begin{array}{r} 1 \\ 2 \\ 231 \\ 2449 \\ 38722 \\ 41364 \\ 3199824(9876 \\ 324444 \\ 3222 \\ 33 \end{array}$
---	---	--

C in

Note

# The Pathvay to knowledge.

## Note.

When any summe is found to be deuised by 10, 100 or 1000  
ec. then cut off from the right hand as many figures from the  
deuident, as there are 0 before the deuisor, and it is deuided, as if  
you would deuide 897600 by 100, then cut off from the 897600  
two figures on the right hand, and there resteth 8976, for the  
production.

## Progression.

Progression teacheth how to bring diuers numbers following  
one the other, (even or odde) into one summe, and is done in adding  
the first and the last number together, and multiplie the producti-  
on by the halfe of the number of the progression, as for example.

A merchant that hath 40 pound of spices, the first pound at a  
penny, the second at 2 pence, the third at 3 pence, and so every  
pound rising a penny higher, so that the 40 pound must amount  
vnto 40 pence, the question is how much money it amounteth vnto.

$$\begin{array}{r}
 40 \\
 1 \\
 \hline
 41 \\
 20 \\
 \hline
 00 \\
 82
 \end{array}$$

820 pence, is 3 pound, 8 shillings, 4 pence.

There is a progression of 14 numbers, beginning with 3 and  
rising 2 in each number, how much shall all the numbers make,  
where the last were 29, it maketh 224, add 3 to 29 and it ma-  
keth 32, which multiply by the halfe of 14, as 7 and it maketh 224.

There is a progression of 14 numbers, whereof the first num-  
ber is 3, and the rising is 2, what is the last number of the pro-  
gression. Answer, take the first number from the 14 numbers,  
and there resteth 13, which multiply by 2, which is the figure  
rising, and it shall make 26, wherunto add 3 being the first num-  
ber, and it shall make 29 which is the last number.

There is a progression whereof the first number is 3 and the  
last is 29, and the rising is 2, how many numbers is there in the  
whole progression.

Answer.

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Answer, sub tract 3 being the first number from 29 being the last number, there will remaine 26, which deuide by 2, the number of increasing, the production will be 13, wherevnto adde 1, the first number, there wilbe 14, the number of the progression.

A merchant buileth 50 pound of spice, the first pound for 4 d. the second for 7 pence the third 10 pence, and so rising 3 pence in each pound, the question is how much he must pay for his spice. Answer, let certaine summes one after the other, beginning at 4, and rising with 3, as hereafter followeth.

0	1	2	3	4	5	6	7	8	9
4	7	10	13	16	19	22	25	28	31

Where you see that 31 standeth vnder 9, then adde 31 to 31, and they make 62, from the which subtract 4 being the first number, there resteth 58 for the summe, which should stand vnder 18, because 9 and 9 make 18.

Then double 58, and it maketh 116, from the which take 4, resteth 112, the number which should stand vnder 36, vnto the which 112 adde 31, and it shall make 143, from the which subtract 4 there resteth 139, for the number which should stand vnder 45, (for 36 and 9 maketh 45) now there wanteth 4 of 49, wherefore you must adde 16, (which is the number which should stand vnder 4) to the 139, and it shall make 155, from whence take 4, and there resteth 151, for the number which should stand vnder 49, and so you haue the last summe of the 50 pound. Now to know how much all these summes make, then adde the first number being 4, and the last number being 151 together, they make 155, which multiply by the halfe of the numbers of your whole summe of 50 pound, which is 25, and it maketh 3875 pence, which are 16 pound 2 shillings 11 pence, the summe to be paid for the 50 pound of spices.

A merchant buileth a garden, to pay at 9 payments, that is at the first payment 3 pence, at the second 9 pence, at the third 27 pence, at the fourth 81 pence, and so increasing in a triple forme euery payment til 9 payments be made, the question is how much money it is. Answer, 9 payments in triple proportion, beginning with 3, the last payment shall make 19683, which being multiplied  
by

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by 3 the proportion, it maketh 59049, from whence subtract 3 which is the first payment, there will rest 59049, which divide by 2, (the proportion of the whole one lesse) and it will make 26523 pence, which is 124 pound 13 shillings and 7 pence, which he must pay for the same Garden.

1.	2.	3.	4.	5.	6.	7.	8.	9.
3.	9.	27.	81.	243.	729.	2187.	6561.	19683

A merchant buyeth a horse, that hath twentiethe nailes in his shoes making bargaine to pay for the first naile 3 pence, for the second 6 pence, for the third 12 pence, and so rising double every naile in proportion, unto the 20 naile, the question is what he must paie for the horse, place some numbers of the progression as followeth.

0	1	2	3	4	5	6	7
3	6	12	24	48	96	192	384

Now you see that the number of 384, standeth vnder 7, and the number of 192, vnder 6, then multiplie both those numbers together, they make 73728, which divide by the number of 3, it maketh 24576. The number that should stand vnder 13 for 7 and 6, are 13 and it is the 14 number of the nailes. But because you must haue 20 nailes, then looke how much it wanteth of 20, which is 6, vnder the which summe of 6, there is 192, which multiply with 24576, it is 4718592, which divided by 3, maketh 1572864 pence, the valew of the 20 naile, which multiplied by 2 the proportion will be 3145728, from the which take 3, the price of the first naile there resteth, 3145725 which divided by 1, which is the proportion, it shall make the sum as before, which is the summe of the 20 nailes for the horse, which amounteth vnto the summe of 13107 pound 3 shillings 9 pence, the price of the horse.

A merchant buyeth 8 bushells of Wye in a quadrangle proportion, that is the first bushell for 1 shilling, the second for 5 shillings, the third for 9 shillings, and so rising 4 shillings in each bushell, the question is how much it amounteth vnto in the whole: and what each bushell is by it selfe according to the price in the whole bushell. Answer, double the 8 it maketh 16, where vnto adde 1 it maketh 17, which divided in 3 maketh  $5\frac{2}{3}$  which multiply with the summe of the naturall progression from 1 to 8, which is 36, and it

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it maketh 204 shillings, which he must pay for the 8 bushells of Ale, and one bushell with an other is at the price of 25 shillings and 6 pence.

Also a merchant hath solde 8 bushells of wheat in a cubical progression, that is, the first bushell for 1 shilling, the second for 8 shillings, the third for 27 shillings, and so rising in each bushell, to the number of 8 bushells, the question is how much the 8 bushells shall cost.

Answer, at 1 with 8 it maketh 9, which multiply in it selfe, maketh 81, then multiply the halfe of 8 in it selfe, it maketh 16, which multiply by 81, maketh 1296 shillings, which is 64 pound 16 shillings 0 pence, the price of the 8 bushells, and one bushell with another shall stand him in 8 pound 2 shilling the bushell.

### The rule of three.

The rule of three, is a rule of three numbers, multiplied and devided together, thereby to know the fourth number which you take, and it is done by setting the first number that you desire to know on the right hand, and then the number like that in denomination on the left hand, and the third which is of a contrarie denomination to them both in the middle, that done multiply the middle number with the last number, and deuide that summe by the first number, and the production is your demaunde: as for example, 5 ells of cloth cost 7 shillings what shall 35 ells cost: multiply 7 shillings with 35 ells, it maketh 245 which deuide by 5 ells, it maketh 49 shillings, so much the 35 ells of cloth shall cost.

5 ells cost 7 shillings what shall 35 ells cost.

$$\begin{array}{r} 7 \\ \hline 245 \end{array}$$

$$\begin{array}{r} 4 \\ 245 \overline{) 980} \\ \underline{980} \\ 0 \end{array}$$

Also a peece of cloth cost 26 shillings 6 pence, what shall 10 clothes cost. Reduce your middle summe into pence, it maketh 318 pence which multiply by 10 maketh 3180 pence, which deuided by 20 maketh 159 pence, which is 13 pound 5 shillings 0 pence.

1 cloth cost 26 shillings 6 pence, what shall 10 clothes cost.

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$$\begin{array}{r}
 12 \\
 \hline
 52 \\
 266 \\
 \hline
 318 \\
 10 \\
 \hline
 3180
 \end{array}$$

$$\begin{array}{r}
 \times \times \\
 \times 760 \\
 3 \times 50 (26 | 5 \\
 \times 222 \quad 13 | 1.55.00. \\
 \times \times
 \end{array}$$

Also a cloth cost 10 l. 8 s. 4 d. what shall 12 clothes cost? Reduce your money into pence, and it maketh 2500 pence, which multiplied by 12 maketh 30000 pence, which divided by 12 pence to a shilling, maketh 2500 shillings, which divided by 20 shillings to a pound, it maketh 125 pound, the price of 12 clothes.

1 cloth 10 pound, 8 shillings 4 pence, what shall 12 clothes cost?

$$\begin{array}{r}
 20 \\
 \hline
 208 \\
 12 \\
 \hline
 416 \\
 2084 \\
 \hline
 2500 \\
 12 \\
 \hline
 5000 \\
 2500 \\
 \hline
 30000
 \end{array}$$

$$\begin{array}{r}
 \times \\
 \times 60 \\
 30000 (250 | 0 \\
 \times 2222 \quad 125 | 6 \\
 \times \times \times
 \end{array}$$

If 16 ells cost 23 shillings, 4 pence: what shall 5 ells cost, it maketh 7 s. 3 d.  $\frac{1}{2}$ . Reduce your middle number into pence, they make 280 pence: then multiply the pence by 5 ells, it maketh 2400 d. which divided by 16 ells the first summe, it maketh 87 pence  $\frac{1}{2}$ , that is 7 shillings 3 pence  $\frac{1}{2}$ . so much 5 ells shall cost.

16 ells of 23 shillings 4 pence, what shall 5 ells cost?

$$\begin{array}{r}
 12 \\
 \hline
 46 \\
 234 \\
 \hline
 280 \\
 5 \\
 \hline
 1400
 \end{array}$$

$$\begin{array}{r}
 \times 5 \\
 62 (8 \\
 \times 400 (87 \text{ pence, is } 7 \text{ s. } 3 \text{ d. } \frac{1}{2} \\
 \times 66 \\
 \times
 \end{array}$$

If 8 ells of cloth cost 3 shillings 2 pence, what shall 64 ells cost.

At

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It maketh 18 Shillings, 8 pence.

8 ells 3 Shillings 2 pence, what shall 64 ells cost?

$$\begin{array}{r} 12 \\ \hline 26 \\ 2 \\ \hline 28 \\ 64 \\ \hline 112 \\ 168 \\ \hline 1792 \end{array}$$

$$\begin{array}{r} 120 \\ 1792 \\ 888 \end{array}$$

$$\begin{array}{r} 2 \\ 108 \\ 224 \text{ (18 shil. 8 pence)} \\ 122 \\ 1 \end{array}$$

A Merchants servant spendeth yearly 40 l. 2 s. 8 d. he to m<sup>r</sup> ch is  
p a day, accompting 365 daies to a yeare, it maketh 2 s. 2 d.  $\frac{14}{11}$   
365 daies, 40 pound, 2 Shillings, 8 pence, what is one day?

$$\begin{array}{r} 20 \\ \hline 00 \\ 802 \\ 802 \\ 12 \\ \hline 1604 \\ 8028 \\ \hline 9632 \end{array}$$

$$\begin{array}{r} (1 \\ 54 \\ 237 \\ 3432 \\ 9632 \\ 3655 \\ 36 \end{array}$$

26 d. is 2 s. 2 pence,  $\frac{14}{11}$

A Merchant spendeth 2 Shillings 4 pence euery weeke, he to much  
is that in a yeare and 15 weekes, it maketh 7 pound, 16 Shillings  
4 pence, accompting 52 weekes to a yeare.

1 weeke, 2 Shillings 4 pence, what 1 yeare 15 weekes.

$$\begin{array}{r} 12 \\ \hline 24 \\ 4 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 52 \\ \hline 52 \\ 15 \\ \hline 67 \\ 28 \\ \hline 536 \\ 134 \\ \hline 1876 \end{array}$$

$$\begin{array}{r} 11 \\ 0674 (1 \\ 1876 (15 | 6 \\ 1222 7 | 1. 16 s. 4 d. \\ 11 \end{array}$$

A man hireth 24 labourers for 6 dayes, at 7 d. the day each man,  
how much maketh it in all, it is 4 l. 4 s. for 6 daies for 24 men.

29 D y

1 man

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1 man 7 pence a day, 24 men 6 dayes.

$$\begin{array}{r} 6 \\ \hline 144 \\ 7 \\ \hline 1008 \end{array}$$

$$\begin{array}{r} 24 \\ 1008(84 \\ \times 22 \\ \times \end{array}$$

If one hundredeth waight cost 12 shillings 6 pence the hundredeth, how many pound shall be bought for 109 pound, 0 shilling 4 pence.

It maketh 19535  $1 \frac{1}{11} \frac{8}{11}$ .

If 12 shillings 6 pence, be for 112 pound, for how many pound shall 109 pound, 0 shilling, 4 pence be.

12	26164	00 (1	20
24	112	5323	000
126	52328	14858(1	218
150	26164	29303(68(195351	2180
	26164	1500000	12
	2930368	15555	4360
		111	21804
			26164

## The prooffe of the rule of three.

The prooffe of the rule of three is thus, set that number that stood last, first, and that which stood first last, and place the number you found out in the midst, and then worke as you did in the rule of three, and if it be true, the middle summe of your question propounded will be the production: as for example.

If 19535  $1 \frac{1}{11} \frac{8}{11}$  be bought for 109 l, 0 s, 4 d, how many pound shall be bought for 1236 d? facit 112 l.

If 109 pound, 0 shilling, 4 pence, buye 19535  $1 \frac{1}{11} \frac{8}{11}$ . What will 12 shillings 6 pence buye.

20	150	0	12
000	00000	190	24
2180	0976758	111	126
2180	195351	1123	150
12	2930368	324920	
4360		2930368(112	
21804		2616444	
26164		26166	
		261	

The

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The like must be done with any other lesson done by the Rule of three.

To take vp the parts of any deuision left as in the former example: there is the summe of

$$19535 \text{ } 1 \frac{11}{17}.$$

When any deuision hapneth to haue a remainer of figures, which cannot be brought to a lower summe, then set the deuisor right vnder the same figures, as in  $\frac{11}{17}$  it is seene, & then take them out by 2, 4, 6, 8, 10, 12 or more euen parts, untill such time as you cannot take an euen partes out of them but that there will remaine some odde numbers in the one or the other of the sums, then seeke out an euen sum that you may take out of them both, as 3, 5, 7, 9, 11, 13, and so forth, but if you can finde no such summes in them, whereby they cannot be brought to a lower denomination, then you must name them as you finde them set downe, as for example.

$\begin{array}{r} 59 \\ \frac{1}{17} \overline{) 59} \\ 59 \\ \hline 0 \end{array}$	$\begin{array}{r} 59 \\ \frac{1}{17} \overline{) 59} \\ 59 \\ \hline 0 \end{array}$
---	---

And lower it will not be brought, so you must doe in other summes, and this you must name  $\frac{11}{17}$  which is the lowest summe.

A generall rule to take vp broken numbers and to reduce them into small summes.

When there hapneth a broken number to abreuiate or to take vp, as  $\frac{4163}{3077}$  and that you cannot by the former rule reduce it into a small summe, then doe thus, deuide the nominator 4163 by 3077 and there will rest 1, and  $\frac{1086}{3077}$  then deuide the same 3077, by 1086, there resteth 2, and  $\frac{905}{1086}$  then deuide that 1086, by 905, there will rest 1, and  $\frac{181}{905}$ , then deuide 905 by 181, and there will 5 remaine. Note that when you haue deuided the deuisor with the other number so large, that there resteth nothing, the last sheweth the number or part, wherewith this broken number must be deuided, which is in this 181, with the which deuide 3077 it maketh 17 for the denominator, then deuide the 4163 by 181, it maketh 23, for the nominator, which is  $\frac{23}{17}$  for the least proportion of  $\frac{4163}{3077}$ .

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(8  
(1096  
41631  
3077

(0  
1915  
30772  
1086

(181  
10861  
905

4  
9055  
181

15  
226  
3077(17  
1811  
18

2  
254  
4163(23  
1811  
18

## Fractions, or broken numbers.

When a number is deuider into 2 partes or more, then it is called a broken number, as  $\frac{3}{4}$  signifieth 3 for the partes, and as any number is deuider into 4 even parts, then it signifieth 3 even parts of the saide 4 parts, whereof the upper number is named the numerator, and the lower number vnder the line the denominator.

To know which broken number of  $\frac{3}{4}$  or  $\frac{4}{5}$  is greatest, multiplie 3 by 5 and it maketh 15, which you must set ouer the 3, then multiplie 4 by 4, and it maketh 16, which you must set ouer the 4, whereby it is euidently seene, that  $\frac{4}{5}$  is greater then  $\frac{3}{4}$  because the greatest number is found aboue the same.

$$\begin{array}{r} 15 \quad 16 \\ \frac{3}{4} + \frac{4}{5} \end{array}$$

Which is the greatest broken number of  $\frac{4}{5}$ ,  $\frac{3}{4}$  or  $\frac{6}{7}$ , it is  $\frac{6}{7}$ .

To bring diuers broken numbers into one denominated sum, as  $\frac{1}{2}$ ,  $\frac{3}{4}$ ,  $\frac{5}{8}$  multiplie all the denominators together, and they make 192 for their generall denominator, which number you must deuide each of their severall denominators, and multiplie the production by each of their severall numerators.

$$\frac{96}{192} \quad \frac{118}{192} \quad \frac{144}{192} \quad \frac{130}{192}$$

How many shillings is  $\frac{7}{8}$  partes of a pound, multiplie the numerator by 20 shillings (which make a pound) and it maketh 140 shillings, which deuide by the denominator which is 8, and it will make 17 shillings 6 pence. How many pence is  $\frac{5}{8}$  partes of a shilling, multiplie the 5 by 12 (the number of pence in a shilling) and it maketh 60 pence, which deuide by 8 it maketh 7 pence,  $\frac{4}{8}$ .

How many partes of a pound is 7 shillings 6 pence, multiplie 7 shillings by 12 pence, and adde thereto 6 pence, it maketh 90 pence,

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pence, which deuide by 240 pence, which make a pound, and the production wilbe  $\frac{2}{34}$ , or  $\frac{1}{17}$ , of a pound.

How many partes of a pound is 16 shillings, multiplie by 12 pence, for so many pence make a shilling, and the production wilbe  $\frac{12}{16}$ , which is  $\frac{3}{4}$  of a pound.

Also how to set  $7\frac{2}{3}$  in one broken denominator, you must mul-  
7 by 3, and it maketh 21, then adde 2 thereto, it maketh 23, for the  
numerator, and 3 for the denominator, and is thus set downe  $7\frac{2}{3}$ .

### Addition in broken numbers.

When you will adde diuers broken numbers together, that  
are all of one kinde, then adde the numerators together, and set  
one denominator vnder them all, but when they haue vnlke de-  
nominators, then multiplie the numerators, with the denomina-  
tors, crosse wise, and adde both the productions together, and then  
deuide the same number by the multiplication of the 2 denomina-  
tors, and the production shall be your demaunde.

To adde  $\frac{1}{2}$  to  $\frac{1}{4}$  and  $\frac{1}{8}$ , they make  $\frac{5}{8}$ , or 1 whole and  $\frac{1}{8}$ .

To adde  $\frac{3}{4}$  with  $\frac{1}{2}$  it maketh  $\frac{5}{4}$  or 1  $\frac{1}{4}$ .

To adde  $\frac{1}{2}$   $\frac{1}{4}$   $\frac{1}{8}$ , first adde  $\frac{1}{2}$  with  $\frac{1}{4}$  it maketh  $\frac{3}{4}$  then adde the  
same with  $\frac{1}{8}$  it maketh  $\frac{7}{8}$ , or 1  $\frac{1}{8}$ .

To adde  $2\frac{1}{2}$  with  $2\frac{3}{4}$  first adde  $\frac{1}{2}$  with  $\frac{3}{4}$  they make  $1\frac{5}{4}$ , the  
which adde with 2 and 2 they make in all  $6\frac{1}{4}$ .

To adde  $34\frac{1}{4}$ ,  $35\frac{1}{2}$ ,  $36\frac{3}{4}$ ,  $37\frac{1}{2}$ , and  $38\frac{1}{2}$  together, first adde the  
broken numbers together, and they make  $3\frac{7}{4}$ , which add with  
the other whole numbers, and they shall make in all  $183\frac{7}{4}$ .

### Substraction in broken numbers.

V Vhen you will subtract one broken number out of the other  
hauing like denominators, then take the smallest numeras-  
tor out of the greatest, and set one denominator vnder them both:  
but if they haue vnlke denominators, then multiplie the numeras-  
tors crosse wise, and subtract the one production out of the other,  
and the remainer shall be the numerator, then multiplie the deno-  
minators together, and the production shall be the denominator.

To subtract  $\frac{1}{2}$  out of  $\frac{3}{4}$  resteth  $\frac{1}{4}$  or  $\frac{1}{2}$ .

To subtract  $\frac{1}{3}$  out of  $\frac{2}{3}$  resteth  $\frac{1}{3}$ .

To

## The Pathvay to knowvledge.

To subtract  $\frac{1}{2}$  out of  $3\frac{2}{3}$ , resteth  $2\frac{1}{3}$ .

To subtract  $4\frac{1}{2}$  out of  $7\frac{1}{3}$ , resteth  $2\frac{1}{6}$ .

To subtract  $\frac{2}{3}$  out of  $5$ , thereresteth  $4\frac{1}{3}$ .

To subtract  $5\frac{2}{3}$  out of  $9$ , resteth  $3\frac{1}{3}$ .

## Multiplication in broken numbers.

**W**hen you will multiplie one broken number with the other, having either like, or unlike denominatoꝛs, then multiplie the numeratoꝛs together, and the production is your numeratoꝛ: also multiplie the denominatoꝛ together, and the production is your denominatoꝛ.

To multiplie  $\frac{2}{3}$  with  $\frac{4}{5}$  it maketh  $\frac{8}{15}$ .

To multiplie  $\frac{3}{4}$  with  $\frac{1}{2}$  it maketh  $\frac{3}{8}$  or  $\frac{3}{8}$ .

To multiplie  $3$  with  $\frac{4}{5}$  it maketh  $2\frac{12}{5}$  or  $2\frac{2}{5}$ .

To multiplie  $4\frac{4}{5}$  with  $5\frac{1}{2}$  it maketh  $22\frac{2}{5}$  or  $25\frac{2}{5}$ .

To multiplie  $4$  with  $7\frac{2}{3}$ , it maketh  $30\frac{2}{3}$ .

To multiplie  $\frac{2}{3}$  with  $16$ , it maketh  $10\frac{2}{3}$ .

## Diuisiõ in broken numbers.

**W**hen you will deuide some broken numbers, of like denomination, then deuide the one numeratoꝛ by the other but when the denominatoꝛs are unlike, then multiplie the denominatoꝛ of the deuisoꝛ, with the numeratoꝛ of the summe which you will deuide, and the production shall be the numeratoꝛ: then multiplie the denominatoꝛ of the summe that you will deuide, with the numeratoꝛ of the deuisoꝛ, and the production shall be the denominatoꝛ.

To deuide  $\frac{1}{2}$  by  $\frac{1}{3}$ , it maketh  $3$ .

To deuide  $\frac{2}{3}$  by  $\frac{1}{4}$  it maketh  $2\frac{2}{3}$  or  $1\frac{2}{3}$ .

To deuide  $21$  by  $\frac{3}{4}$  it maketh  $28$ .

To deuide  $4\frac{1}{2}$  by  $2$  it maketh  $2\frac{1}{2}$ .

To deuide  $5\frac{1}{2}$  by  $6\frac{1}{2}$  it maketh  $\frac{11}{13}$ .

To deuide  $24$  by  $\frac{3}{4}$  it maketh  $32$ .

The prooffe of the rules aforelaid.

Substraction is the prooffe of addition, and addition is the prooffe  
of

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of subtraction, so deuision is the p<sup>ro</sup>ofe of multiplication, and multiplication the p<sup>ro</sup>ofe of deuision.

To finde the broken parts of broken parts.

M<sup>u</sup>ltiplie the numerato<sup>rs</sup> together, and the p<sup>ro</sup>duction shalbe the numerato<sup>r</sup>, so must you doe with the denominato<sup>rs</sup>, and the p<sup>ro</sup>duction shalbe the denominato<sup>r</sup>.

To finde the  $\frac{2}{3}$  of  $\frac{7}{8}$  it makeith  $\frac{14}{24}$  or  $\frac{7}{12}$ .

The  $\frac{2}{3}$  of 5, is  $3\frac{1}{3}$  or  $3\frac{2}{3}$ .

The  $\frac{3}{4}$  of  $4\frac{1}{2}$  is  $3\frac{3}{8}$  or  $3\frac{3}{8}$ .

Of what number is  $3\frac{1}{2}$  of  $\frac{1}{4}$ , out of  $4\frac{1}{2}$ .

Of what number is  $3\frac{1}{2}$  of  $\frac{2}{3}$  out of 5.

Of what number is  $\frac{3}{4}$  of  $\frac{6}{7}$  out of  $\frac{7}{8}$ .

There are two men to deuide a certaine summe of money, whereof the first must haue the  $\frac{2}{3}$  of  $\frac{7}{8}$ , and the other  $\frac{1}{2}$  of  $\frac{2}{3}$  out of  $\frac{1}{4}$ , the question is what part each of them must haue, and what shall remaine. It is thus, the first shall haue the  $\frac{7}{12}$  and the second the  $\frac{1}{4}$ , and the remaino<sup>r</sup> must be  $\frac{1}{8}$ .

The rule of three in broken numbers.

When your three numbers be fractions, for an apt worke and certaine, multiplie the numerato<sup>r</sup> of the first number in the question by the denominato<sup>r</sup> of the 2, and all that againe multiplie by the denominato<sup>r</sup> of the third number, and the totall thereof shall you keepe for your deuiso<sup>r</sup>, then multiplie the denominato<sup>r</sup> of the first number by the numerato<sup>r</sup> of the second, and the whole thereof by the numerato<sup>r</sup> of the third, and the totall thereof shalbe your deident, now deuide this deident by the deuiso<sup>r</sup>, which you found out befo<sup>re</sup>, and that number shalbe the fourth number of the question which you demaund, as for example. If  $\frac{1}{4}$  of a yard of cloth cost  $\frac{2}{3}$ , of a soueraigne, esteemed at 20 shillings, what shall  $\frac{1}{2}$  cost. facit.

$$\frac{1}{4} + \frac{2}{3} + \frac{2}{3}$$

M<sup>u</sup>ltiplie 3 the numerato<sup>r</sup> of the first number by 3 the denominato<sup>r</sup> of the second, and thereo<sup>cc</sup>mmeth 9, which multiplie againe by 6, the denominato<sup>r</sup> of the third number, and you haue 54, which keepe for the deuiso<sup>r</sup>, then multiplie 4, the denominato<sup>r</sup> of the first by 2, the numerato<sup>r</sup> of the second, and there riseth 8,

e

which

## The Pathvway to knowvledge.

which againe I multiply by 5 the numerator of the third, and it maketh 40. Then must I deuide 40 by 54, and it wilbe  $\frac{40}{54}$ , that is  $\frac{20}{27}$ : and then the figures must be thus.  $\frac{1}{2} - \frac{2}{3} - \frac{1}{4} - \frac{20}{27}$ .

If  $\frac{1}{2}$  parts of a pound of silver, be worth  $\frac{1}{4}$  of a soueraigne, what is  $\frac{1}{3}$  of a pound waight worthe? facit  $1 \frac{7}{12}$ .

$$\frac{1}{2} + \frac{1}{3} + \frac{1}{4}.$$

This lesson is to be wrought if you will in whole numbers, and this you may the better vnderstand it, it is thus.

To returne these fractions in whole numbers, you must multiplye 11 which is the numerator of the first, by 4 the denominator of the second, and there wilbe 44, which multiply by 2, the denominator, of the third, and it is 88, which is the deuisor in the first place, then in the second place set 12 which is the numerator in the second fraction, and in the third place set the sum that amounteth of 12 being the denominator in the first number, multiplied by 1, being numerator in the 3 number, and so the figure will stand.

$$88 - 12 - 12$$

To worke it you must multiply 12 by 12 and it is 144, which deuide by 88, and the quotient wilbe  $\frac{9}{11}$  that is  $1 \frac{8}{11}$  and then it wilbe thus.

$$\frac{1}{2} + \frac{1}{3} + \frac{1}{4} = 1 \frac{8}{11}$$

This shall suffice for the vnderstanding of this rule, or any other question of the same, for proufe of the which rule, multiplye the first number by the fourth, and note what amounteth, then multiply the second by the third, and marke what amounteth also, now if these 2 numbers so amounting be equall, then is it true, otherwise you haue erred.

### A shorte instruction of practisc, showing the partes of a pound by shillings and pence

- |   |  |
|---|--|
| 1 | 1 shilling is the $\frac{1}{20}$ parte of a pound.         |
| 3 | 2 shillings is the $\frac{1}{10}$ parte of a shilling.     |
| 4 | 2 shillings 6 pence is the $\frac{1}{4}$ parte of a pound. |
| 5 | 3 shillings 4 pence is the $\frac{1}{3}$ parte of a pound. |
| 6 | 4 shillings is the $\frac{1}{5}$ of a pound.               |
| 7 | 5 shillings is the $\frac{1}{4}$ parte of a pound.         |
| 8 | 6 shillings 8 pence is the $\frac{1}{3}$ part of a pound.  |

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2 1 shilling 8 pence is the  $\frac{1}{5}$  part of a pound.

9 10 shillings is the  $\frac{1}{2}$  part of a pound.

The parts of shillings by pence.

$\frac{1}{4}$  penny is the  $\frac{1}{24}$  part of a shilling.

$\frac{1}{2}$  farthings is the  $\frac{1}{12}$  part of a shilling.

1 penny is the  $\frac{1}{12}$  part of a shilling.

1 penny  $\frac{1}{2}$  is the  $\frac{1}{6}$  part of a shilling.

2 pence is the  $\frac{1}{6}$  part of a shilling.

3 pence is the  $\frac{1}{4}$  part of a shilling.

4 pence is the  $\frac{1}{3}$  part of a shilling.

6 pence is the  $\frac{1}{2}$  part of a shilling.

Wherein you see what parts of a pound or shilling you may take to finde out your demand, as at 2 shillings 6 pence a yarde of cloth you must take the  $\frac{1}{5}$  part of a pound and it sheweth what 100 yards at that price doe amount unto, so that 4 pence an ell of Southwick, which is the  $\frac{1}{3}$  of a shilling, you must take  $\frac{1}{3}$  and it will shew you what 1000 ells doe amount unto, as for example.

329 yarden, at 6 pence the  
yarde.

$\frac{1}{5}$  (1  
19 | 8  
9 | 18. 6 d.

104 yarden at 4 pence the  
yarde.

$\frac{1}{5}$  (1  
3 | 4 s. 8. d  
1 | l.

5014 yarden, at 3 pence  
a yarde.

$\frac{1}{5}$  (1  
125 | 3 s. 6 d.  
62 | l.

532 yarden, at 2 pence the  
yarde.

$\frac{1}{5}$  8 | 8 s. 8 d.  
4 | l.

409 yarden at 1 penny the  
yarde.

$\frac{1}{5}$  (1  
3 | 4 s. 1 d.  
1 | l.

500 yarden, at  $\frac{1}{4}$  the yarde.

$\frac{1}{5}$  (1  
3 | 1 s. 3 d.  
1 | l.

400 yarden, at  $\frac{1}{2}$  the yarde.

$\frac{1}{5}$  16 s. 8 d.

© y

Adm

# The Pathway to knowledge.

Now if your pence be odde summes, as 5 d. 7 d. 9 d. 10 d. or 11 d. then take them thus.

For { 5 take — 3 d. and 2 d. or 4 d. and 1 d.  
 7 take — 4 d. and 3 d. or 6 d. and 1 d.  
 9 take — 6 d. and 3 d. or 4 d. 4 d. and 1 d.  
 10 take — 6 d. and 4 d. or 4 d. 4 d. and 2 d.  
 11 take — 6 d. 4 d. and 1 d. or 4 d. 4 d. and 3 d.

These perticular parts of pence, are to be taken in their parts, as before is set downe, as for 3 d.  $\frac{1}{2}$  part, for 2 d.  $\frac{1}{2}$  part, for 4 d.  $\frac{1}{2}$  part, and for 3 d.  $\frac{1}{4}$  part, and so in the rest: as before in the parts of pence are declared. For the better understanding whereof, I will set you downe 2 examples.

843 yarde at 5 d. the yarde.

	5 d.
3 d. $\frac{1}{2}$	210.9
2 $\frac{1}{2}$	140.6
	(1
	35   1.3
	17   1. 11 s. 3 d.

764 yards, at 7 d. the yarde.

	7 d.
4 d. $\frac{1}{2}$	254.8
3 d. $\frac{1}{2}$	191.0
	44   5.8.
	22   1. 5 s. 8 d.

Otherwise.

843 yards, at 5 d. the yarde.

	5 d.
4 d. $\frac{1}{2}$	281.0
1 $\frac{1}{2}$	70.3
	(1
	35   1.3
	17   1. 11 s. 3 d.

764 yards, at 7 d. the yarde

	7 d.
6 d. $\frac{1}{2}$	382.—
1 $\frac{1}{2}$	63.8
	44   5.8
	22   1. 5 s. 8 d.

343 l.

# The Pathway to knowledge.

343 l. of Saffron at 15 shillings the pound.

$$\begin{array}{r} 15 \\ \hline 108. \frac{1}{2} \\ 58. \frac{1}{2} \\ \hline 171.10 \\ 85.15 \\ \hline 2571.58.00. \end{array}$$

140 ells of cloth, at 1 shilling the elle.

$$\begin{array}{r} 18. \frac{1}{2} \\ \hline 1 \\ \hline 0071. \end{array}$$

340 ells of lace of golde, at 2 shillings the elle.

$$\begin{array}{r} 28. \frac{1}{2} \\ \hline 2 \\ \hline 341. \end{array}$$

463 ells of cloth, at 1 shilling 8 pence the elle.

$$\begin{array}{r} 18.80. \frac{1}{2} \\ \hline 1.8 \\ \hline 381.118.80. \end{array}$$

763 yardes, at 2 shillings 6 pence the elle.

$$\begin{array}{r} 28.60. \frac{1}{2} \\ \hline 2.6 \\ \hline 95.7.6 \end{array}$$

850 l. of Pepper, at 3 shillings 4 pence the pound.

$$\begin{array}{r} 3840. \frac{1}{2} \\ \hline 34 \\ \hline 141.13.4 \end{array}$$

950 l. of Cloves, at 4 shillings the pound.

$$\begin{array}{r} 48. \frac{1}{2} \\ \hline 48. \\ \hline 1901. \end{array}$$

1234 ounces of siluer, at 5 shillings the ounce.

$$\begin{array}{r} 58. \frac{1}{2} \\ \hline 58. \\ \hline 3081.108.00. \end{array}$$

1563 pound of Mace, at 6 s. 8 d. the pound.

$$\begin{array}{r} 68.80. \frac{1}{2} \\ \hline 6.8 \\ \hline 5211. \end{array}$$

2064 yardes of Satin, at 10 shillings a yarde.

$$\begin{array}{r} 108. \frac{1}{2} \\ \hline 10 \\ \hline 10321. \end{array}$$

Now if there fall out odde parts of pounds, as 3 shilling 6 shillings, 7 shillings, 8 shillings, 9 shillings, 11 shillings, 12 shillings, 13 shillings, 14 shillings, 15 shillings, 16 shillings, 17 shillings, 18 shillings, or 19 shillings, that a pound, yarde or elle of cloth, silke, lace, spice, or any marchandise may cost: then you must take such parts as the small table hereafter sheweth.

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3 s. take 2 s. and 1 s.  
 6 s. take 4 s. and 2 s.  
 7 s. take 5 s. and 2 s. or 5 s. and 5 s.  
 8 s. take 4 s. and 4 s. or 5 s. 2 s. 1 s.  
 9 s. take 5 s. and 4 s. or 4 s. 4 s. 1 s.  
 11 s. take 10 s. and 2 s. or 5 s. 4 s. 2 s.  
 12 s. take 10 s. and 2 s. or 5 s. 5 s. 2 s.

13 s. take 10 s. 2 s. 6 1 s.  
 14 s. take 10 s. and 4 s.  
 15 s. take 10 s. and 5 s.  
 16 s. take 10 s. 5 s. 1 s.  
 17 s. take 10 s. 5 s. 2 s.  
 18 s. take 10 s. 4 s. 4 s.  
 19 s. take 10 s. 5 s. 4 s.

These particulars of shillings, are to be taken in their parts, as  
 before is declared, and for 3 shillings you must take 2 shillings  $\frac{2}{3}$ ,  
 and for 1 shilling  $\frac{1}{3}$  part of a pound, and for 6 shillings you must  
 take for 4 shillings  $\frac{1}{3}$ , and for 2 shillings  $\frac{1}{3}$  part of a pound, as in  
 the examples following is declared.

1643 pound of Pepper, at 3 shillings the pound.

	3 s.
2 s. $\frac{1}{3}$	164 6
1 s. $\frac{1}{3}$	82 3
	2461.9 s. 0 d.

873 yards of cloth, at 6 shillings the yarde.

	6 s.
4 s. $\frac{1}{3}$	174 12
2 s. $\frac{1}{3}$	87 6
	2611.18 s. 0 d.

1800 l. of Cloves, at 7 shillings the pound.

	7 s.
5 s. $\frac{1}{4}$	450
2 s. $\frac{1}{4}$	180
	630 l.

934 yards of cloth, at 8 shillings the yarde.

	8 s.
4 s. $\frac{2}{3}$	186 16
4 s. $\frac{1}{3}$	186 16
	3731.12 s. 0 d.

953 yards of Creggerm, at 9 shillings the yarde.

	9 s.
5 s. $\frac{2}{3}$	238 5
4 s. $\frac{1}{3}$	190 12
	4281.17 s. 0 d.

1060 yards of Satin, at 11 shillings a yarde.

	11 s.
10 s. $\frac{1}{2}$	530
1 s. $\frac{1}{2}$	53
	583 l.

853

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853 yarde of Satin at 12 s.  
the yarde.

	12 s.
10 s. $\frac{1}{2}$	426. 10 s.
2 s. $\frac{1}{4}$	85. 6
	<hr/> 511 l. 16 s. 0 d.

732 yarde of Damaske, at  
13 shillings a yarde.

	13
10 s. $\frac{1}{2}$	366
2 s. $\frac{1}{4}$	73. 4
1 s. $\frac{1}{8}$	36. 12
	<hr/> 475 l. 16 s. 0 d.

950 l. of Cochenila, at 14 s.  
a pound.

	14 s.
10 s. $\frac{1}{2}$	475
4 s. $\frac{1}{4}$	190
	<hr/> 665 l.

763 l. of Cochenila, at 15 s.  
a pound.

	15 s.
10 s. $\frac{1}{2}$	381. 10
5 s. $\frac{1}{4}$	190. 15
	<hr/> 572 l. 5 s. 0 d.

654 yarde of cloth, at 16 s.  
a yarde.

	16 s.
10 s. $\frac{1}{2}$	327
5 s. $\frac{1}{4}$	163. 10
1 s. $\frac{1}{8}$	32. 14
	<hr/> 523 l. 4 s. 0 d.

843 elles, at 17 shillings the  
elle.

	17
10 s. $\frac{1}{2}$	421. 10
5 s. $\frac{1}{4}$	210. 15
2 s. $\frac{1}{8}$	84. 6
	<hr/> 716 l. 11 s. 0 d.

942 pound, at 18 shillings  
a pound.

	18
10 s. $\frac{1}{2}$	471
4 s. $\frac{1}{4}$	188. 10
4 s. $\frac{1}{4}$	188. 10
	<hr/> 848 l. 0 s. 0 d.

731 yarde of Meluet, at 19  
shillings a yarde.

	19
10 s. $\frac{1}{2}$	365. 10
5 s. $\frac{1}{4}$	182. 15
4 s. $\frac{1}{4}$	146. 4
	<hr/> 694 l. 9 s. 0 d.

How

## The Pathvay to knowledge.

Hovv to bring pence into pounds at the  
first working, by the rule of practice.

I **T**his thus, there are in a pound 240 pence, in consideration whereof cut off the 0, and there remaineth but 24, of the which 24, 8 pence is the  $\frac{1}{3}$  part, 6 pence the  $\frac{1}{4}$  part, 4 pence the  $\frac{1}{6}$  part, and 2 pence the  $\frac{1}{12}$  part. To proue this worke, there are 1965 yards of linnen cloth, at 8 pence the yarde, what do all those yards amount vnto in the whole.

Now for the order of working as is said before, you must cut off the last figure of the 1965 yards, and there remaineth but 196, out of the which take  $\frac{1}{3}$  part, it maketh 65 pound, and there resteth 1, which you must adde vnto the 5 you toke from the 1965 and it maketh 15 yards at 8 pence the yarde, which double to make into groats, and they make 30 groats, whereof the  $\frac{1}{3}$  part maketh 10 shillings, whereby it appeareth that 1965 yards of linnen cloth, at 8 pence the yarde, is 65 pound 10 shillings.

This rule thus obserued, will bring you to the easier abrensa-  
ting of your parts of pence, although to some it will not seeme so easie, but there is nothing that practice and experience doth not bring to passe.

But to make it yet more plaine for the other parts of the said 24, you must take for 6 pence  $\frac{1}{4}$  part of the number from the figure prickt off, if any remaine they are so many 6 pences, whereof taking the one halfe they are shillings, if there remaine one, it is in value 6 pence.

For 4 pence, take  $\frac{1}{6}$  part of the number from the prickt figure, if any remaine, they are so many groates, which to conuert into shillings, take  $\frac{1}{3}$  part, if any remaine, they are  $\frac{1}{3}$  part of shillings each one 4 pence.

For 3 pence take  $\frac{1}{8}$  part from the prickt figure, if any remaine, they are so many 3 penny peeces, of which taking  $\frac{1}{4}$  part, they are shillings, if any remaine, they are fourth parts of shillings.

For 2 pence, take  $\frac{1}{12}$  part from the prickt figure, if any remaine they are so many 2 penny peeces, which by taking the  $\frac{1}{6}$  part, are conuerted into shillings, and if any remaine, they are so many 6 parts of a shilling. But if your number of pence be not an even part

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part of 24, then you must reduce them into even parts of 24, and make diuers productions, as for 5 pence a parde, first take 3 pence. and then 2 pence, and then as the rule sheweth, or take 4 pence and a penny, which is all one.

### Diuerse questions of the rule of three, wrought by practise.

I If a Roiall of plate be worth six pence, and you tell 40 Roialls for a pound, how many Roialls must you haue in the whole summe.

Il. 40 Roi.

$$\begin{array}{r}
 1000 \text{ l.} \\
 \underline{40} \\
 0000 \\
 4000 \\
 \hline
 40000
 \end{array}$$

facit 40000 Roials.

If a Phillip's Dollar be worth 4 shillings 8 pence, how much English money is 465342 Dollars?

I dol. 4 s. 8 d. what is 465342 dollars. fac: 108579 l. 16 s. 0 d.

$$\begin{array}{r}
 12 \\
 \underline{48} \\
 8 \\
 \hline
 56
 \end{array}
 \qquad
 \begin{array}{r}
 56 \\
 \hline
 2792052 \\
 2326710 \\
 \hline
 26059152
 \end{array}$$

$$\begin{array}{r}
 \times \\
 \times \times \times \times \\
 2817270 \quad (1 \\
 26059152 \quad 217159 \quad 6 \\
 \times 2222222 \quad 108579 \quad 16.0 \\
 \times \times \times \times \times
 \end{array}$$

If I deliuer Angels heere, at 10 shillings the peece, to be payde 10 shillings 2 pence the peece in Flanders for each Angell, how much must I receiue for 1654 pound of English money.

If

1654

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1654  
2

3308

3308

10s. 2d.

1654 . 0 . 0

27 . 11 . 2

1681 . 11 . 4

facit 1681 l. 11 s. 4 d.

If I receive 8060 French Crownes, at 6 shillings 0 pence the pce in France, how much English money must I pay here, at 6 shillings 1 penny the pce.

8060

6 . 1

201 . 5

403

33 . 11 . 8

2451 . 11 . 8

facit 2451 l. 11 s. 8 d.

If I buye 1965 yardes of cloth, at 16 shillings the yarde, what shall I gaine in the whole summe, to sell them at 17 shillings 3 pence the yarde.

1965 yardes

16

982 . 10

491 . 5

98 . 5

1572 l. 0 at 16 s.

1965 yardes.

17 . 3

982 . 10

491 . 5

196 . 10

24 . 11 . 3

1694 . 16 . 3

1694 . 16 . 3

1572 . 0 . 0

122 . 16 . 3

gained.

If I buye 837 yardes of linnen cloth, for 16 pence the yarde, how must I sell the same to gaine 20 pound in the whole 837 yardes.

facit 21 pence, and  $\frac{2840}{13312}$ .

837 . —

16 . —

41 . 17

13 . 19

55 l. 16 s. 0 d.

If

# The Pathvay to knowvledge.

If 55 pound, 16 shil. 0 pence, gaine 20 l. what shall 16 pence.

$$\begin{array}{r}
 20 \\
 \hline
 00 \\
 1106 \\
 \hline
 1 \\
 1116 \\
 \hline
 12 \\
 2232 \\
 1116 \\
 \hline
 13392
 \end{array}$$

$$\begin{array}{r}
 20 \\
 \hline
 00 \\
 40 \\
 \hline
 400 \\
 12 \\
 \hline
 800 \\
 400 \\
 \hline
 4800 \\
 16 \\
 \hline
 28800 \\
 4800 \\
 \hline
 76800
 \end{array}$$

$$\begin{array}{r}
 (9 \\
 108'4 \\
 2135(0 \\
 76800(50. \frac{914}{1116} \\
 13392
 \end{array}$$

If I make ouer 1000 pound starling by exchange, at 33 shil. 4 pence Flemish, for euery 20 shilling starling money, how much Flemish money must I receiue in Flanders.

facit 1666 l. 13 s. 4 d. Flemish money, for 1000 l. starling.

$$\begin{array}{r}
 1000 \text{ l.} \\
 33 \cdot 4 \\
 \hline
 1000 \\
 333 \cdot 6 \cdot 8 \\
 333 \cdot 6 \cdot 8 \\
 \hline
 1666 \cdot 13 \cdot 4
 \end{array}$$

If I sell 432 yardes of Meluet for 462 pound, what doe I sell a yarde for.

facit 1 l.  $\frac{1}{3}$ .

$$\begin{array}{r}
 (3(2 \\
 462(11. \\
 432 \\
 \hline
 30 \\
 432 \\
 216 \\
 \hline
 72
 \end{array}$$

If a common Dollar be worth 3 shillings, and a Princes Dollar worth 3 shil. 6 pence, how many Princes Dollars must be payde for

# The Pathvay to knowvledge.

102 483 common Dollars.

facit 414 paires Dollars.

3 s. 6 d.  
6 d.

483 Dollars.  
69

facit 414.

A Merchant must pay 453 pound, at 3 payments, that is,  $\frac{1}{4}$  part at a moneth,  $\frac{1}{2}$  part at 2 moneths, and the rest in 3 moneths, what shall he pay at a time.

Facit { 113 l. 5 s. at the first payment  $\frac{1}{4}$ .  
75 l. 10 s. at the second payment  $\frac{1}{2}$ .  
264 l. 5 s. at the third payment the rest.

A Merchant is to pay 113 l.  $\frac{1}{4}$  part in one moneth, and 75 l.  $\frac{1}{2}$  in 2 moneth, and 264 l.  $\frac{1}{4}$ , in 3 moneths: the question is in what time he shall pay the three summes all at one payment.

113 l. $\frac{1}{4}$	1 moneth	113 $\frac{1}{4}$
75 l. $\frac{1}{2}$	2 moneths	151
264 l. $\frac{1}{4}$	3 moneths	792 $\frac{1}{4}$
453. 0		1057. 0

(1  
25(1 mon.  
2057 (2.  $\frac{1}{4}$   
453  
facit in 2 moneths.  
and  $\frac{1}{4}$  part.

A Merchant is indebted to another 480 pounds, to pay it in 5 moneths  $\frac{1}{2}$ , and when 4 moneths are past, then he payeth 280 pounds, saying take this, and let me have the 200 pound that remaineth as much after the day as I have paid you before your day the summe of 280 pound, the question when he shall paie the 200 pound. Answer, subtract 4 moneths out of 5 moneths  $\frac{1}{2}$  then subtract 280 pound out of 480 pound, then there resteth 200 pound, and say if 200 pound make 1 moneth  $\frac{1}{2}$  how much shall 280 pound make. facit. 2 moneths  $\frac{1}{2}$  part, that he shall pay the 200 pound after the 5 moneths and  $\frac{1}{2}$  are ended.

pounds.	moneths.
480	5 $\frac{1}{2}$
280	4
200	1

If 200 l. 1 mon.  $\frac{1}{2}$  what 280 l.  
facit. 2 mon.  $\frac{1}{2}$ .

A Mer.

## The Pathvay to knowledge.

A Merchant oweth 240 l. to be paide in 6 moneths, but at the end of 1 moneth  $\frac{1}{3}$  he payeth 60 l. and three moneths after that he payeth 80 l. more. The question is, in what time he shall pay the rest, according to his time of 6 moneths, in such sort that neither of them be hindered thereby.

60 l. 1 mon. $\frac{1}{3}$	90	}	facit	3 moneths $\frac{2}{3}$ parts of a moneth, after 6 moneths.
80 l. 4 mon. $\frac{1}{3}$	360			
100 l. 1 rest	100			

A Merchant is indebted to pay the 24 of May 300 l. whereof he paide the 29 of Aprill the same yeare 80 l. and the 9 of May after 120 l. The question is upon what day he shall pay the rest of the money. Answer: Set 80 pound to be paide 25 daies before the time, for from the 29 of Aprill to the 24 of May, is 25 daies, and 120 l. paide 15 daies before the time.

pound.	daies.		10	daies.
80	25	2000	3800	(19 these 200 l. were paid before y <sup>e</sup> time.
120	15	1800	200	
200		3800	20	

So w<sup>ill</sup> when the rest shall be paide, and say.

If 100 l. 19 daies, 200 l. facit 38 daies, after the 24 of  
Maye, which is the first of Iuly.

A Merchant is indebted to pay 600 l. in 3 moneths, he offereth to paye ready money, so that the partie will rebate him  $2\frac{1}{4}$  per cento of his principall. the question is, how much he must paye in ready money.

100
$2\frac{1}{4}$
97 $\frac{1}{4}$

If 100 pound be but 97 pound 15 shil-  
lings, what shall 600 pound.  
facit 586 l. 10 s.

A Merchant is indebted to pay 685 pound in 5 moneths, which he will pay in ready money, so he may haue 4 per cento rebated, that is, out of euery 104 pound, he will be rebated 4 pound, the question is, what he must pay in ready money?

100
4
104

If 104 pound, be but 100 pound,  
what 685 pound.  
facit 658 l.  $\frac{1}{4}$  parts.

¶ 19

¶

## The Pathvay to knowledge.

A merchant must pay 675 l. wherof he hath paid 124 duckets at 3 s. 11 d. the pcece, and 62 riders dollars at 2 s. 4 d. the pcece, the question is how much he hath to paie besides.

$$\begin{array}{r}
 124 \\
 \times 3 \text{ 11} \\
 \hline
 20 \text{ 13 4} \\
 3 \text{ 2 0} \\
 \hline
 10 \text{ 4} \\
 24 \text{ 5 8} \\
 7 \text{ 1} \\
 \hline
 31 \text{ 6 8}
 \end{array}$$

$$\begin{array}{r}
 62 \\
 \times 2 \text{ 4} \\
 \hline
 6 \text{ 4} \\
 1 \text{ 8} \\
 \hline
 7 \text{ 1 0}
 \end{array}$$

$$\begin{array}{r}
 675 \\
 31 \text{ 6 8} \quad \text{l. s. d.} \\
 643 \text{ 13 4 fac: } 643 \text{ 13 4}
 \end{array}$$

A merchant is to receive a summe of money which is offered him in Duckets at 4 s. 6 d. the pcece, which are no more worthe then 4 s. 5 d. or else in other money, at 3 s. 4 d. the pcece, and worth but 3 s. 3 d. the pcece. The question is, what money he shall receive to have least losse.

If 4 s. 5 d. 1 : 3 s. 4 d. it is  $\frac{24}{27}$  so that if he receive Gelderns, then he loseth a Stiver in a pcece, wherefore it is better for him to receive Duckets.

A Merchant hath a pcece of Battin of 24 yardes  $\frac{3}{4}$ , wherof he selleth 10 yardes  $\frac{1}{2}$  for 10 shillings 4 pence, and the rest for 10 s. 6 d. The question is, how much he receiveth for the whole pcece.

$$\begin{array}{r}
 10 \frac{1}{2} \\
 10 \text{ 4} \\
 \hline
 5 \text{ 3 4} \\
 5 \text{ 2} \\
 \hline
 5 \text{ 8 6}
 \end{array}$$

$$\begin{array}{r}
 14 \frac{1}{2} \\
 10 \text{ 6} \\
 \hline
 7 \text{ 7} \\
 27 \frac{1}{2} \\
 \hline
 79 \text{ 7 } \frac{1}{2}
 \end{array}$$

$$\begin{array}{r}
 \text{l. s. d.} \\
 7 \text{ 9 7 } \frac{1}{2} \\
 5 \text{ 8 6} \\
 \hline
 12 \text{ 18 1 } \frac{1}{2}
 \end{array}$$

A Merchant buyeth a bag of Almonds waying 365 pound, for 3 pound 4 shillings: that is, 165 p. u. d. for 17 shillings the 100. The question is, how much a pound of the rest cost him, to make up 3 pound 4 shillings.

$$\begin{array}{r}
 165 \text{ l. at } 17 \text{ s. the } 100. \\
 178. \\
 \hline
 1155 \\
 165 \\
 \hline
 2805
 \end{array}$$

$$\begin{array}{r}
 365 \text{ l. cost } 3 \text{ l. 4 s. 0 d.} \\
 165 \text{ l. rest } 1 \text{ l. 8 s. 6 d.} \\
 \hline
 \text{rest } 1 \text{ l. 15 s. 6 d.}
 \end{array}$$

facit 2 d.  $\frac{1}{4}$  of a penny the pound.

A mer.

## The Pathway to knowledge.

A merchant hath bought 300 pounds worth of corne, to say, wheat for 4 shilling 2 pence the bushell Rie for 3 shilling 8 pence, and Barley for 3 shillings the bushell, and as often as he taketh 3 bushells of wheat, he taketh 5 bushells of Rie, and for euery 7 bushells of Rie he taketh 9 bushells of Barley. The question is how many bushells he must haue of each sort, for the said 300 pounds.

3 bushells of wheate at 4 shillings 2 pence, is 12 s. 6 d.

5 bushells of Rie at 3 shillings 8 pence, is 18 s. 4 d.

7 bushells of Rie for 9 bushells of Barley, what 5.

facit. 6 bushells  $\frac{2}{7}$  part.

6 bushells  $\frac{2}{7}$  Barley, at 3 shillings is 19 s. 0 d.

14 bushells  $\frac{2}{7}$  cost, 2 l. 9 10

If 2 pound 9 shillings 10 pence, buie 14 bushels  $\frac{2}{7}$ , what shall 300 pound buie.

$$\begin{array}{r} 7 \\ 98 \\ 3 \\ \hline 101 \end{array}$$

facit, 1737  $\frac{2}{7}$  bushells, so much shall he receiue of each sort.

Now to know how much of each sort, set it thus.

14 bushells $\frac{2}{7}$ 1737 bushells $\frac{2}{7}$ what shall	}	3 facit 364 $\frac{2}{7}$
		5 facit 607 $\frac{2}{7}$
		6 $\frac{2}{7}$ facit 765 $\frac{2}{7}$
		14 $\frac{2}{7}$ 1737 $\frac{2}{7}$

A Merchant buieth beere for 45 shillings the tun, accounting 6 barrells to the tun, and giueth in paiment 9 barrells of butter, at 26 s. 9 d. the barrell, how much must be paid in readie money.

$$\begin{array}{r} 26 \ 9 \\ 9 \\ \hline 234 \\ \frac{1}{2} \ 2 \\ \frac{1}{4} \ 3 \\ \hline 240 \ 9 \end{array}$$

$$\begin{array}{r} 45 \\ 8 \ \frac{1}{2} \\ \hline 360 \\ \frac{1}{2} \ 22 \ 6. \\ \hline 382 \ 6 \\ 340 \ 9 \\ \hline \text{rests } 14 \ 1 \ 9 \\ 71.18.9 \text{ d. to pay.} \end{array}$$

## The Pathway to knowledge.

A merchant hath bought 26 tunnes and 3 barrells of beere, at 32 shillings the tunne, upon condition that as often as he payed ready money for 2 tuns, he would pay for 3 tuns by meale, at 31 shillings 6 pence the tunne, accounting 6 barrells to a tunne, the question is how many tunnes of meale he shall deliver, and how much he must pay in ready money.

tun.    tun.    tun.    { 2 facit. 10 tun. 6 bar. in redy money.  
       5        26        3    { 3 facit. 15 tun. 9 barrells in meale.

10 tun. 6 barrells.

32	
20	
30	
320	
16	
(1	
33   6	
11. 16. 0	

26 tun. 3 barrells.

32	
52	
78	
(1	
83   5	
41. 15. 0	

facit	41	15	0	all the beere cost in money.
fui	11	16	0	
	29	19	0	

If 31 shillings 6 pence, buie 1 tun of meale, what shall 29 pound 19 shillings 0 pence buie.

facit, 15 tun, 9 barrells of meale, and he must paye in ready money for the same beere, 11 l. 16 s. 0 d.

A Merchant hath bought  $3\frac{1}{2}$  great hundredes lesse, 2 hundredeth & 48 of clapboards, without the allowance for 25 pound 10 shillings the hundredeth, the question is how much it amounteth unto, note that one great hundredeth is 24 small hundredths, and a small hundredeth 120, one for every great hundredeth there must be 48 boards, taken away, and for every small hundredeth 2, and for every 60 one board, or if it be 119, but one, and if there be under 60 then there is nothing allowed off.

great

## The Pathway to knowledge.

great C.	small C. boards.
3 . —	8 — 29
25 . 10	
<hr/>	
75 . 10 . —	
8 . 12 . 6	
5 . 2	
<hr/>	
84 . 7 . 8	
<hr/>	
facit	84 l. 7 s. 8 d.

## The backe rule of three.

I **I**n the back rule of three, you must set the thing you demaunds first, then the matter it cost, and the same denomination that you first pounded, last: as in this example.

It is ordained in the Citie of London, that when a bushell of Wheate costs the Baker 48 pence, then he shall make his pennie loafe 6 ounces. The question is, how heauie the bread shall be when the bushell of Wheate cost but 32 pence. It maketh nine ounces.

If 32 pence make 6 ounces, what shall 48 pence.

48	10 ounces.
6	288(9
<hr/>	32
288	

If 8 workemen make a peece of worke in 9 dayes, in how long time shall the same peece of worke be made, by 6 workemen.  
facit in 12 dayes.

If 6 workemen 9 dayes, what 8 workemen.

8	10 dayes.
9	72(12
<hr/>	66
72	6

A man

## The Pathway to knowledge.

A man hath bought 5 yardes of cloth for a cloake, and it is 10 quarters broad. The question is, how much lining will serue for the same cloake, of 6 quarters broad. It maketh 8 yardes  $\frac{2}{3}$ .

If 6 quarters 5 yardes, what 10 quarters.

$\begin{array}{r} 10 \\ 5 \\ \hline 50 \end{array}$	$\begin{array}{r} (2 \\ 50 \text{ 8 yardes } \frac{2}{3} \\ 6 \end{array}$
---	--

A Merchant lendeth his friend 280 pound for 3 moneths, without interest. The question is, how much the other must lend him againe for 4 moneths, without interest, so that the other may be content? facit 260 l.

If 4 moneths 280 l. what 3 moneths?

$\begin{array}{r} 280 \\ 3 \\ \hline 840 \end{array}$	$\begin{array}{r} 0 \\ 200 \\ 840 (210 \text{ l.} \\ 444 \end{array}$
---	---

A Castell is to be besieged, wherein are 450 Souldiars, and the same is victualed for 5 moneths: now the Souldiars doubting that the siege will continue longer time, they determine to put forth so many of their Souldiars, that the same victuals may last them 9 moneths. The question is, how many must remaine within the Castell? It maketh 250 Souldiars, then they must put forth 200.

If 9 moneths 450 Souldiars, what 5 moneths.

$\begin{array}{r} 450 \\ 5 \\ \hline 2250 \end{array}$	$\begin{array}{r} 40 \text{ souldiars.} \\ 2256 (250 \\ 999 \end{array}$
--	--

### Questions of Interest.

If 100 pound gaine 6 pound, what shall 248 pound gaine.  
facit 14 pound,  $\frac{22}{37}$  parts.

If

# The Pathway to knowledge.

If 100 l. gaine 6 { 
$$\begin{array}{r} 248 \\ 6 \\ \hline 1488 \end{array}$$
 
$$\begin{array}{r} 0 \\ 000 \\ 1488 (141 \\ 1000 \\ 10 \end{array}$$
 
$$\begin{array}{r} 22 \\ 44 \\ 88 \\ \hline 100 \\ 50 \\ \hline 25 \end{array}$$

If 100 pound gaine 9 pound, what shall 348 pound gaine?  
facit 31 l.  $\frac{2}{7}$  parts.

100 l. 9 l. what 348 l. 
$$\begin{array}{r} 9 \\ \hline 3132 \end{array}$$
 
$$\begin{array}{r} 3132 (311 \\ 1000 \\ 10 \end{array}$$
 
$$\begin{array}{r} 8 \\ \hline 11 \\ 32 \\ \hline 100 \\ 50 \\ \hline 25 \end{array}$$

If 100 pound gaine 12 pound in a yeare, what shall 674 pound gaine in 4 moneths?  
facit 26 l.  $\frac{2}{7}$  parts.

100 l. 12 mo. gain 12 l. what 674 l. in 4 mon. 
$$\begin{array}{r} 12 \\ \hline 200 \\ 100 \\ \hline 1200 \end{array}$$
 
$$\begin{array}{r} 4 \\ \hline 2696 \\ 12 \\ \hline 5392 \\ 2696 \\ \hline 32352 \end{array}$$
 (1 
$$\begin{array}{r} 1 \\ 2 \\ \hline 18 (1 \\ 323 (52 (26 \\ 12000 \\ 120 \end{array}$$
 
$$\begin{array}{r} 72 \\ \hline 144 \\ 288 \\ 576 \\ \hline 1152 \\ 1200 \\ 600 \\ 300 \\ \hline 150 \\ \hline 75 \end{array}$$

If 100 pound in 12 moneths, gaine 12 pound, how much money must we haue to gaine 26 pound in 4 moneths.  
facit 600 l.

If 12 moneths gaine 12 pound, what shall 4 moneths gaine?

$$\begin{array}{r} 4 \\ 48 \end{array}$$
 
$$\begin{array}{r} 0 \\ 48 (41. \\ 12 \end{array}$$

# The Pathvay to knowvledge.

If 4 moneths gaine 100 pound, what shall 26 pound gaine.

$$\begin{array}{r} 26 \\ \hline 600 \\ 200 \\ \hline 2600 \end{array}$$

$$\begin{array}{r} 0 \\ 2600(600L \\ 444 \end{array}$$

A Marchant delivereth 420 pound to interest for 3 monethes, at 10 per cento by the yeare, and when the time is expired, the debie for requireth to have the money for 2 moneths longer at 12 l. per cento, the question is, what the interest money will amount unto.  
facit 18 pound, 18 shillings, 0 pence.

If 100 l. in 12 moneths, gaine 10 l. what shall 420 l. gaine in 3 moneths.

$$\begin{array}{r} 12 \\ \hline 200 \\ 100 \\ \hline 1200 \end{array}$$

$$\begin{array}{r} 0 \\ 12(600(10l. \\ 12000 \\ 120 \end{array}$$

$$\begin{array}{r} 1 \\ 2 \\ \hline 3 \\ 1260 \\ 10 \\ \hline 12600 \\ 1260 \\ \hline 12600 \end{array}$$

facit 10 l. 10 s.

If 100 pound, in 12 moneths 12 pound, what 420 pound in 2 moneths.

$$\begin{array}{r} 12 \\ \hline 200 \\ 100 \\ \hline 1200 \end{array}$$

$$\begin{array}{r} 2 \\ \hline 840 \\ 12 \\ \hline 1680 \\ 840 \\ \hline 10080 \end{array}$$

facit 8 l. 8 s.

10. 10

18 l. 18 s. 0 d.

$$\begin{array}{r} 24 \\ 1200(80(8l. \\ 1200 \end{array}$$

$$\begin{array}{r} 2 \\ \hline 480 \\ 1200 \\ 80 \\ \hline 10 \end{array}$$

A Merchant delivereth 800 l. to interest for 4 moneths, at 6 per

## The Pathway to knowledge.

per cento by the yeare, & deliuereth 900 l. more for 6 moneths, at 8 l. per cento, and at the last they agree to pay all the money at one payment. The question is, when the money must be paid, and how much the interest money is in all. The interest is 52 l. 13 s. 4 d. it must be paid at 5 moneths, and  $\frac{1}{7}$  parts of a moneth.

If 100 pound 12 moneths, 6 l. what 800 l. in 4 moneths?  
facit 16 pound.

If 100 pound 12 moneths 8 pound, what 900 l. 6 moneths?  
facit 35 l. 13 s. 4 d.

If 3840 d. 4 mon. 15360 d.  
If 8800 d. 6 52800 d.  

---

12640 68160

(4  
5  
289  
68160 (5 mon. &  $\frac{1}{7}$  parts.  
12640

31  

---

62  
124  
248  
4960  

---

12640  $\frac{31}{7}$   
632  
316  
158  

---

79

A Merchant deliuereth 300 l. interest for 12 moneths, at 12 l. per cento, for the which he hath a bill given him of 336 l. and hauing occasion to vse money, he is forced to sell his bill for 12 l. per cento losse. The question is, how much money he must receiue for his bill.

facit 295 l.  $\frac{1}{7}$  parts.

If 100 l. make 88 l. what shall 336 l. make.

facit 295 l.  $\frac{1}{7}$  parts.

A Merchant deliuereth 421 l. to interest for 4 yeares at 12 per cento, and to receiue interest vpon interest. The question is, what money he shall receiue at the end of 4 yeares.

If 100 l. 112 l. 421 l.

112  

---

842  
421  
421  

---

47152

47152 (471 l.  $\frac{1}{7}$  parts  
10000  
100  
8

## The Pathvay to knowvledge.

If 100 l. 112 l.	what ———	471 l.	$\frac{12}{100}$	
If 100 l. 112 l.	what ———	528	$\frac{4}{100}$	662
If 100 l. 112 l.	what ———	591	$\frac{4}{100}$	420
If 100 l. 112 l.	what ———	662	$\frac{12}{100}$	242

facit, interest 241 l. 6 s. 8 d,  
in the whole summe.

A merchant taketh vp 320 l. at interest for 2 yeares at 7 l. per cento, and euery yeare intrest vpon intrest, how much must he pay for intrest money.

If 100 l. 107 l. 320 l.	facit 343 l.	$\frac{4}{100}$
If 100 l. 107 l. 343 l. 8 s.	facit 367	$\frac{4}{100}$

facit he must pay 47 l. 8 s. 1 d. for  
intrest for 2 yeares.

A Merchant taketh 400 l. at intrest for a yeare after 12 per cento, and he deliuereth the same money out at intrest, for 3 moneths, at 3 per cento, the question is, if that he receiue euery 3 moneths, interest vpon interest, how much money shall he receiue for interest at the yeares end.

If 100 l. 103 l. 400 l. ——— facit 412 l. for 3 moneths.

Multiplie and diuide as you did in the question of 4 yeares, and it will make that he shall gaine 2 l. 4 s. 1 d. for the leane of his 400 l. for 12 moneths, at 3 per cento, for 3 moneths, accounting interest vpon interest.

A Merchant is debitor to another 3600 l. to pay in 3 yeares, that is, the first yeare 1200 l. the next 1200 l. and the 3 yeare 1200 l. but they agree that he shall pay the whole summe together at the end of 3 yeares, growing 6 per cento interest, and euery yeare interest vpon interest, the question is how much he must pay at the 3 yeares end. facit. 3829 l. 4 s. 4 d.

If 100	106	1200	facit. 1272 l.	first.
If 100	106	1272	facit. 1348 l.	$\frac{12}{100}$ second.
If 100	106	1348 $\frac{12}{100}$	facit. 1429 l. 4 s.	third.
				3829 . 4 . 4

## The Pathway to knowledg.

A Merchant oweth another Merchant 665 l. to be paide at 3 yeares, which he presenteth in ready money, so that his creditor will cut him off 10 per cento, and the interest upon interest, the question is how much he must pay in ready money after the rate.

facit. 500 l.

If 110 l. be but 100 l. what shall 665 — first 605 l.

If 110 l. be but 100 l. what shall 605 — second 550 l.

If 110 l. be but 100 l. what shall 550 — third 500 l.

facit he must paie 500 l. ready money.

A Merchant is debitor to another 350 l. to pay in 4 moneths, and the said Merchant to whom the 350 l. is due, oweth unto his debitor 300 l. to pay at 5 moneths, the question is (each taking 9 per cento interest) what they must pay each to other, and what their accompt will be.

If 12 mon. gaine 9 l. what shall 4 mon. gaine? facit 3 l.

If 100 l. be but 97 l. what shall 350 l. be. facit 339 l. 10 s.

that must be paide in ready money, for the 350 l.

If 12 mon. 9 l. what shall 5 mon. facit 3 l. 15 s.

If 100 l. be but 96 l. 5 s. what shall be 300 l. facit 288 l. 15 s.

that must be paide for the 300 l. ready money.

Then take 288 l. 15 s. out of 339 l. 10 s. there resteth 50 l. 15 s. that the Merchant which ought 350 l. must pay unto his creditor.

A Merchant lendeth another 400 l. upon interest, at 10 per cento, the question is how long he shall lend him so much money accounting interest upon interest, to get 50 l. by the same money.

If 100 l. 100 l. what 400. facit 440 l. which is lesse then

450 l. Now if 440 pound were put to interest for an

other yeare, it would be 484 l. which is more then 450 l.

wherefore subtract 440 l. out of 450 l. and there resteth

10 pound to be gained, therefore say if 100 l. gaine 10 l.

how much shall 440 l. gaine, it maketh 44 l. then say a-

gain if 44 l. gaine be had in 12 moneths, in what space

must 10 l. be gained, it maketh 2 moneths and  $\frac{2}{11}$ .

so it appeareth that 50 l. shall be gained by 400 l. in a yeare

2 moneths, and  $\frac{2}{11}$  parts of a moneth.

## The Pathvway to knowvledge.

If 100 l. gaine 16 l. in a yeare, the question is in what time after the same rate shall a man double 300 l. facit.

Say if 100 l. 116 l. 300 l. facit, in 5 yeares 630 l. which is more then 600 l. and 543 l.  $\frac{116}{100} = \frac{543}{300}$  that he shall haue in 4 yeares, is lesse then 600 l. by 56 l.  $\frac{543}{100} = \frac{56}{100}$  that must be gained after the 4 yeares, then say. If 100 l. gaine 16 l. what shall 543 l.  $\frac{16}{100} = \frac{86}{543}$  facit 86 l.  $\frac{86}{543} = \frac{7}{12}$  then say, if 86 l.  $\frac{7}{12}$  gains must be gotten in 12 moneths, in what space shall 56 l.  $\frac{56}{86} = \frac{7}{12}$  be gained. - facit, 7 mon.  $\frac{7}{12}$  parts of a moneth, so it appeareth that 300 l. shall be doubled in 4 yeares and 7 moneths, and  $\frac{7}{12}$  parts of a moneth.

A Marchant delinereth 100 l. at interest to receiue for the same at a yeare 112 l. after that he agreeth with his debitor to pay him euerie 3 months a certaine summe of money and that each sum of money shall be as much one as the other, the question is what each payment shall be, rebating euerie three months interest vpon interest, after 3 per cento, and that he be paid his 112 l. at the yeares ende.

Take that the creditoꝝ receiueth at the 3 moneths ende, 1  $\frac{3}{4}$  of pounts, and say if 100 l. be 103 l. what shall 1  $\frac{3}{4}$ , facit 1  $\frac{3}{4}$   $\frac{3}{4}$  at the end of 6 months, addether vnto 1  $\frac{3}{4}$  that he must receiue euerie 3 moneths, and it maketh 2  $\frac{3}{4}$   $\frac{3}{4}$ , the interest whereof at 3 per cento, will be in 9 moneths 2  $\frac{3}{4}$   $\frac{3}{4}$  where vnto adde one  $\frac{3}{4}$  it maketh 3  $\frac{3}{4}$   $\frac{3}{4}$   $\frac{3}{4}$  which will make with the interest at the ende of 12 moneths, 3  $\frac{3}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{3}{4}$ , therevnto adde 1  $\frac{3}{4}$ , which he desireth to receiue at each 3 moneths. and it is 4  $\frac{3}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{3}{4}$  so that each payment shall be 26 l.  $\frac{11}{16}$  with the interest.

Prooffe.

If 100 l.	103 l.	26 $\frac{11}{16}$	facit,	27 $\frac{11}{16}$
If 100 l.	103 l.	27 $\frac{11}{16}$	facit,	28 $\frac{11}{16}$
If 100 l.	103 l.	28 $\frac{11}{16}$	facit,	29 $\frac{11}{16}$
				26 $\frac{11}{16}$
				112 l.

A Per

## The Pathvay to knowvledge.

A Merchant hath bought a house for 1600 l. to be paide at 3 yeares, to paie at 4 months of May, each time 400 l. in the ende it is agreed between the parties, that it shall be payd al at one payment, cutting off interest vpon interest, in euery 18 l. one pound, the question is how much ready money must be paid.

If 19 pound be 18 pound, what shall 400 pound be.  
facit 378 l.  $\frac{11}{19}$  the second May.

If 19 pound be 18 pound, what 378 pound  $\frac{11}{19}$ .  
facit 359 l.  $\frac{11}{19}$  the third May.

If 19 pound be 18 pound, what 359 pound  $\frac{11}{19}$ .  
facit 340  $\frac{11}{19}$  the 4 May.

400 pound the first May.

1478 l.  $\frac{11}{19}$  ready money.

A Merchant oweth 662 pound to be paide at 3 yeares, he agreth with his creditoꝝ to pay it at 3 equall payments, the question is how much each payment will be, accounting interest vpon interest, after 10 per cento.

Make that each payment is 1<sup>℥</sup>, so he must pay at the yeares ende 1<sup>℥</sup>.

Then say.

If 100 l. be 110 l. what shall 1<sup>℥</sup>, facit  $\frac{11}{100}$  <sup>℥</sup>, to that adde 1<sup>℥</sup> that must be paide at the ende of 2 yeares, that is  $\frac{21}{100}$  <sup>℥</sup>.

Then say.

If 100 l. be 100 l. what shall  $\frac{21}{100}$  <sup>℥</sup>, it is  $\frac{231}{1000}$  <sup>℥</sup> then adde to it 1<sup>℥</sup>, which must be paide at the yeares ende  $\frac{231}{1000}$ .

A Merchant buieth a house for 2000 l. to be paide at 3 yeares, at 4 severall months of May, 500 l. each payment, how must he sell that house againe for time, that is,  $\frac{1}{4}$  part of the whole summe, the first May, and  $\frac{1}{4}$  part at All hollentide, next after, and on the second May which is a yeare after the first May,  $\frac{1}{4}$  part of the whole summe, that he may neither lose, nor winne, accounting in each 18 pound, one.

## The Pathvay to knowvledge.

Say, that he receiveth for each  $\frac{1}{3}$  part of the whole summe 1 £, so for the first payment 1 £ of the same he must pay 500 l. then there resteth for him 1 £ and 500 l. which will make with the interest at the end of 2 Dayes, which is a yeare 19 £ 9500 pound. When he receiveth at All hollantide 1 £, which with the interest will make at the end of 2 Dayes, which is halfe a yeare  $\frac{1}{2}$  £. When he receiveth the second Daye 1 £, which adde to  $\frac{1}{2}$  £. facit: III £ — 19000, which he receiveth at the end of 2 Dayes, out of the which he must pay 500 l. so he must have yet III £ 37000 l. which with the interest will make at the end of the third Daye 2109 £ 703000, out of the which he must pay 500 l. so there resteth yet 2109 £ 1027000, which with the interest will make at the end of the 4 Daye 40071 £ 19513000, out of the which he must pay 500 l. for the fourth payment, therefore these two payments are one like the other, for 40071 £ 19513000 is like 5832000, for 40071 £ is like 25345000 and 1 £, is like 632  $\frac{1}{11}$  l. for each  $\frac{1}{3}$  part, amounteth in a yeare 1897  $\frac{1}{11}$  l. that he must sell that house for the payments aforesaid, p<sup>ro</sup>ofe is thus.

632  $\frac{1}{11}$  l. he receiveth the first Daye, 500 l. he paieth for the first payment, so there resteth 132  $\frac{1}{11}$ , which with the interest at a yeares end will make 139  $\frac{1}{11}$  l. Then he receiveth at Hollontide also 632  $\frac{1}{11}$ , which with the interest for that halfe yeare make 650  $\frac{1}{11}$  l. Then he receiveth at the end of the 2 Day 632  $\frac{1}{11}$ , which ad to 139  $\frac{1}{11}$ , & to 650  $\frac{1}{11}$ , they make 1422  $\frac{1}{11}$  at the end of 2 Dayes, out of the which he payeth 500 l. then there resteth unto him 922  $\frac{1}{11}$ , which at the end of 3 Dayes with the interest will make 973  $\frac{1}{11}$ . out of the which he paieth again 500 l. so there resteth yet 473  $\frac{1}{11}$ , which at the end of the fourth Daye with the interest will make 500 l. which he must pay at the fourth Day, and then he is clere of his house without any losse.

### Questions of profit and losse.

If a last of Herring cost 12 pound, how shall he sell the same to gain 8 pound per cento. facit. 12 l. 19 s. 2 d.  $\frac{2}{3}$ .

If 100 pound, 108 pound, what shall 12 pound make.

If a barrell of Rope cost 17 shillings, wherein there is 10 per cento gotten, what should you have paid in ready money.

## The Pathway to knowledge.

If 110 pound be 100 pound, what shall 17 shillings.

If 12 barrells of beere cost 3 pound 10 shillings, how shall it be solde that there be no more then 7 per cento lost by it. say,

If 100 pound, be 93 pound, what shall 3 pound 10 shillings be.

If a cloth cost 24 pound, and were solde for 25 pound, how much is there gotten in the 100 pound. say,

If 24 pound gaine 1 pound, what shall 100 pound gaine.

If an elle of cloth cost 8 pence and is solde againe for 6 pence, what is there lost upon the hundred pound. say,

If 8 pence lose 2 pence, what shall 100 pound lose.

If a last of wheate cost 28 pound, ready money, how shall it be sold at 4 moneths time, to gaine 12 per cento.

Say, if 12 moneths gaine 12 pound, what shall 4 moneths.

facit, 4 pound.

Then say,

If 100 pound, be 104 pound, what shall 28 pound make.

29 pound  $\frac{3}{4}$  parts.

If a last of wheate cost 28 pound ready money, and be solde for 29 pound, at 4 moneths, what is there gotten by it in the 100 l. for a yeare.

If 28 pound, win 1 pound, what 100 pound.

facit 4 pound.

If 4 pound be gotten in 4 moneths, what shall be gotten in 12 moneths.

facit 12 pound.

If a last of wheate cost 28 pound ready money, for what time should it be sold for 29 pound, to gaine 12 per cento in a yeare.

If 28 gaine 1 pound, what 100 pound, facit 4 pound.

If 12 pound be won in 12 mon. what shall 4 pound.

facit, in 4 moneths.

## The Pathvway to knowvledge.

If a last of Wheate be solde for 29 pound, for 4 moneths, where in there is 12 per cento gotten upon the 100 pound in a yeare, what cost it in ready money.

If 12 moneths 12 pound, what 4 moneths. facit 4 pound.

If 104 pound be 100 pound, what 29 pound. facit 28 l.

If a last of Wheate cost 28 pound, and solde for 29 pound, for 4 moneths, what time must be given to gaine 12 per cento in the same. facit 12 moneths.

If 28 pound be 29 pound, what shall 100 pound be?  
it maketh 104 pound.

If 4 pound be gotten in 4 moneths, in what time shall 12 pound be gotten.

If a last of Wheate cost 28 pound, and is solde againe for 29 pound, for 4 moneths, what summe of money must you have to gaine 12 pound in a yeare.

If 4 moneths gaine 1 pound, what shall 12 moneths.  
facit 3 pound.

If 3 pound be 28 pound, what shall 12 pound be.  
facit 100 pound.

A Merchant hath bought meale for 27 pound ready money, and he selleth it againe for 30 pound, halfe at three moneths, and the rest at 4 moneths: what is there gotten upon the 100 pound in a yeare.

If 27 pound in 7 moneths gaines 3 pound, what shall 100 pound gaine in 12 moneths.

A Merchant hath solde 400 pounds worthe of Pitche, and he findeth that his gaine is 80 pound, how much hath he gained in the 100 pound.

If 320 pound gaine 80 pound, what shall 100 pound?  
facit 25 pound.

## The Pathway to knowledge.

If 5 pound of ware cost 8 pence, and there be 6 pounds false for 10 pence, what is there to be lost in the 100 pounds.

If 5 pound cost 8 pence, what shall 6 pound cost.

facit 9 pence,  $\frac{1}{2}$  parts.

If 9 pence  $\frac{1}{2}$  gain  $\frac{1}{7}$ , what shall 100 pounds gain.

facit 4 pound,  $\frac{1}{4}$  per cento.

A Merchant hath 2 sorts of Ale: that is, 10 last at 28 pound the last, and 15 last at 30 pound the last, how shall he sell one last with the other, to gaine 10 per cento in the yeare:

If 1 last cost 28 pound, what shall 10 last cost:

facit 280 pound.

If 1 last cost 30 pound, what shall 15 last cost. facit 450 l.

25

730

If 25 last cost 730 pound, what shall one last cost:

facit 29 pound 4 shillings.

If 100 pound be 110 pound, what shall 29 pound 4 shil. be:

facit 32 pound, 3 shil. 5 pence,  $\frac{1}{2}$  parts.

A Merchant buyeth Wheate for 48 pound the last ready money, and he selleth the same againe for 54 pound the last,  $\frac{1}{4}$  part ready money,  $\frac{1}{4}$  at 5 moneths, and the rest at 7 moneths, what gaineth he upon the hundredeth:

If 48 pound gaine 6 pound, what shall 100 pound gaine.

facit 12 pound 10 shil. per cento.

If 4 moneths  $\frac{1}{4}$ , gaine 12 pound 10 shillings, what shall

12 moneths.

facit 35 pound 5 shil.  $\frac{1}{2}$  parts.

A Merchant buyeth a last of Ale containing 12 barrells for 50 pound, and he selleth the same againe for 5 pound the barrell, for 3 moneths, what winneth he in the hundred by the yeare.

If 12 barrells cost 50 pound, what shall one cost:

facit 4 pound, 3 shil. 4 pence.

## The Pathway to knowledge.

If 4 pound 3 shillings, 4 pence, in 3 months gaine 16 shillings 8 pence, what shall 100 pound gaine in 12 moneths, multiply and deuide as in the order of the rule.

A Merchaut buieth a last of ashes, for 50 pound, for what time shall he sell the same for 5 pound to gaine 32 pound per cento, in the 100 pound.

Say.

If 12 barrells cost 50 l, what shall 1 cost. facit 4 l. 3 s. 4 d.

If 4 pound 3 shilling 4 pence, gaine 16 shillings 8 pence, what shall 100 pound gaine, 20 pound.

If 32 pound haue 12 men. what shall 20 haue.

facit, 3 moneths.

A merchant buieth a last of ashes, and when he selleth the barrell for 5 pound, for 3 moneths time, he gaineth 32 pound per cento, how much did the last cost him.

Say.

If 1 barrell cost 5 pound, what shall 12 barrells cost, 60 l.

If 12 moneths gaine 32 pound, what shall 3 mon. gaine, 8 l.

If 108 pound be 100 what shall 60 pound, facit 55 l. 10 s.

A merchant buieth a last of Ashes for fiftie pound ready money, and he selleth the barrell for 5 pound, for 3 moneths, and gaineth 32 pound, per cento, by the yeare, how many barrells are there accounted for a last.

Say.

If 12 moneths gaine 32 pound, what shall 3 moneths gaine, 8 l.

If 108 pound be 100 l. what shall 5 l. be, 4 l. 3 s. 4 pence.

If 4 pound 3 shil. 4 pence 1 barrell, what shall 50 pound be.

facit 12 pound.

### Questions of exchange.

If a Dollar in Amsterdam be worth 30 stivers, and in Danske it is worthe 32 polish groffes, how many polish Gilderns of 30 groffes the pece will make 670 Gilderns.

If

# The Pathway to knowledge.

If 30 stivers be 33 grosse. 670 gilderns.

		20		
	grosse.	1	000	
221		1	1340	2218 grosse
14740(4911.	10		13400	442200(14740
3000	30		33	300000
33	15		40200	3333
	3		40200	
			442200	

A Merchant in Danske giueth  $9 \frac{1}{4}$  small markes for to receiue 6 Gilderns for them in Amsterdam, how much shall he receiue in Amsterdam, for 465 small markes.

If  $9 \frac{1}{4}$  small markes be 6 Gilderns, what shall 465 be?  
facit 301 gld. 12 stu. 6. pen  $\frac{3}{7}$ .

A Merchant in Amsterdam giueth 700 Gilders in exchange for Danske, at 133 Polish Grosses, for 6 Gilderns, how many polish Gilderns of 30 grosses the peece, shall he receiue for the same in Danske.

If 6 Gilders be 133 grosse, what shall 700 Gilders.

facit 15516 groses  $\frac{2}{3}$  parts.

facit 517  $\frac{2}{3}$  polish Gilders, at 3 grosse the peece.

A Merchant in Amsterdam deliuereth money by exchange for Danske, to receiue 133 Polish groses for 6 Gilderns Flemish, how many Gilderns Flemish shall he pay in Danske, to receiue 517  $\frac{2}{3}$  polish Gilderns.

facit 700 Gilders.

If 133 grosse, 6 Gilders, what shall 517  $\frac{2}{3}$  parts.

facit 700 Gilders Flemish.

A merchant in Amsterdam, deliuereth 700 Gilderns by exchange for Danske, to receiue there 517  $\frac{2}{3}$  polish Gilderns, how many polish groses will make 6 Gilderns Flemish.

If 700 gilderns be 517  $\frac{2}{3}$  po'ish gild. what 6 gild. Flem.

facit 133 polish groses.

A mer

## The Pathvway to knowvledge.

A Merchant in Amsterdam, deliuereth 640 Gilderins by exchange for Roane, accounting 5 Stiuers Flemish, for 6 sol 10 uernois, what shall he receiue at Roane. facit, 768 Frankes.

If 5 Stiuers be 6 sols, what 460 Gildzens.  
facit, 768 frankes.

A Merchant in Amsterdam, receiueth a bill of exchange from Kouingt berghen of 682 Polish Gildzens, to pay for 132 Polish Grotes, 6 Gildzens Flemish, how much shall he receiue in Amsterdam, facit 930 Gildzens.

If 132 Gro. be 6 Gild. what 682 Gild. Polish.  
facit 930.

A Merchant in Amsterdam, deliuereth his money by exchange for Danske, 135 Grotes Polish, for 6 Gildzens Flemish, at what price shall he deliuer his money at Danske, for Amsterdam, to gaine 6 per cento. facit.

If 106 be 100, what shall 135.  
facit, 127  $\frac{1}{4}$  Grotes.

A Merchant in Amsterdam, taketh vp money at interest for Hamborowe, at 31 shillings Lubs, for 30 Stiuers the Doller, with the same money he buieth Princes Dollars, at 35 Stiuers the peece, and he sendeth them to Hamborowe, for to pay his bill of exchange, and he payeth his Princes dollars out at Hamborowe, 36 shillings Lubs. The question is, what he loseth or winneth, in the 100, accounting 1  $\frac{1}{4}$  part for the charges carying the money.

say, if for 30 Stiuers there must be receiued at Hamborowe, 31 shillings Lubs, how many shillings Lubs, shall be paide in Hamborowe: for 35 Stiuers, (for so much they cost,) it maketh 36  $\frac{1}{4}$  shillings Lubs, a Princes Dollar cost to deliuer it by exchange, for Hamborowe, and if it be sent thither in ready money, then he shall giue it for 36 shillings Lubs, therefore say, if 36  $\frac{1}{4}$  make 36 shillings, what shall 100 make, facit 99  $\frac{1}{4}$ , which subtract from 100, resteth  $\frac{1}{4}$ , that he loseth in the 100, wherevnto add 1  $\frac{1}{4}$  charges, it maketh 1  $\frac{1}{4}$  lost per cento.

A Merc

## The Pathvay to knowledge.

A Merchant in Amsterdam deliuereth money by exchange for Frankeford, 55  $\frac{1}{4}$  pence Flemish, for 65 centfers, and from thence he deliuereth the same money by exchange for Lyons, at 92  $\frac{1}{4}$  centfers, for a crowne of the sum containing 45  $\frac{3}{4}$  sols touernois: what maketh he of his money from Amsterdam to Lyons?

Say, 65 centfers, cost 55  $\frac{1}{4}$  pence, what shall 92  $\frac{1}{4}$  make?  
facit 78 centfers  $\frac{871}{1000}$ .

Then say, 45  $\frac{3}{4}$  sols touernois, cost 78  $\frac{871}{1000}$  centfers, how much shall 45 sols cost which is the value of a crowne. It maketh 77  $\frac{111}{124}$ .

A Merchant in Amsterdam deliuereth 100 pound Flemish by exchange for Danske, at 134 Polish groses for a pound Flemish, and from thence he deliuereth the same money for Hamborow, to receiue at Hamborow for 100 Dollars, 102  $\frac{1}{2}$  Dollars, and from Hamborow he deliuereth the same money for Amsterdam at 30 shillings Lubs, for 30 stivers  $\frac{1}{2}$ . The question is, what he winneth or loseth by that exchange.

Say, if 1 pound Flemish, be 134 groses, what shall 100 l. Flemish be. facit 13400 groses, which deuite by 33 groses, the price of a Dollar, there makes 406  $\frac{2}{3}$  Dollars.

Then say, if 100 Dollars at Danske, make 102  $\frac{1}{2}$  at Hamborow, what 406  $\frac{2}{3}$ , they make 416  $\frac{1}{3}$  dollars, which he receiues at Hamborow.

Then say, if 30 shillings Lubs (which at Hamborow is a Dollar) be 30  $\frac{1}{2}$  stivers, what shall 416 dollars: facit 105 pound, 15 shillings, 8 pence Flemish  $\frac{1}{4}$ , out of the which subtract 100, resteth 5 pound, 15 shillings, 8 pence  $\frac{1}{4}$ , gotten by the exchange.

A Merchant deliuereth at Antwarpe 700 pound Flemish, to receiue for euery 23 shil. 4 pence Flemish in London 20 shil. sterling what English money shall he receiue at London.

If 23 shillings 4 pence, be 20 shillings sterling, what shall 700 pound Flemish be.

A

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## The Pathvay to knowvledge.

A Merchant in London delivereth 500 pound Starling for Antwarpe at 23 shillings 5 pence the pound, what Flemish money must he receiue in Antwarpe.

If 20 shil. be 23 shil. 5 pence, what 500 pound Starling.

There is money taken vp in Antwarpe at 19 shil. 4 pence Flemish, to pay for the same 20 shil. Starling in London, and the day being come, the party is constrained to returne the same money againe to pay the bill, and for each 20 shillings Starling there must be 19 shillings 6 pence Flemish paid in Antwarpe, The question is, what he loseth in the 100 pound.

If 19 shil. 6 pence, be 19 shillings 4 pence, what shall 100 pound be? facit 99 pound, 2 shil.  $\frac{1}{17}$ .

So the losse is in the 100 pound, 17 shil.  $\frac{1}{17}$ .

A Merchant delivereth in London 500 pound Starling, at 5 shillings 6 pence the Crowne, to receiue at Parris 50 sols touernois for a crowne. I demaunde how much French money paieth the said 500 pound Starling.

If 5 s. 6 d. be 50 s. touernois, what 500 pound Starling? facit 2181 l. 16 s. 4 d. touernois.

A merchant delivereth in Bristow 180 pound Starling, to receiue in Lisborne for euery 5 shil. 6 pence Starling, a Dollar at 374 Maruedies: how many Maruedies must he receiue at Lisborne.

If 5 s. 6 d. giue 374 Maruedies, what shall 180 pound.

A Merchant in Biskay delivereth 30000 Maruedies, to receiue in London 5 shil. 6 pence Starling for each Duckett of 374 Maruedies: how much Starling money shall he receiue for his 30000 Maruedies.

If 374 Maruedies be 1 Duckett, what shall 30000 Mar.

It maketh 80 Duckets, and 95 Maruedies.

If 1 be 5 shil. 6 pence, what 80 Duckets, 95 Maruedies.

A note

## The Pathvay to knowledge.

A note of the sorts of Money, what they  
are in each countrey.

I n Lyons they vse Frankes, Sols, Denâres, and French crownes, accompting 20 Shillings a Franke, and 12 Denâres a Sol, and the crowne at 60 Sols.

At Genes they vse Sols, one Duckett maketh thre Frankes.

At Naples they vse Duckets, Taries, and Graines, the duckett is 5 Taries, and one Tarie is 20 Graines, but they take 6 Duckets (which is 30 taries) for an ounce.

A Duckett maketh 10 Carlins, and a Carlin 10 Graines, so that 2 Carlins is a Carrie, and 100 Graines make a Duckett.

At Rome they vse Duckets, one Duckett is worthe 12 Cuplis, and a Cuplie is 10 Sols.

At Venice they vse Duckets at 140 Sols a pèce or 24 Denâres, and one Denare is 32 Picolis.

At Millaine they vse l. s. d. of Duckets imperiall, a crowne in exchange is worthe 4 pound.

At Lucques, Florence, and Aucone, they vse the Crowne of golde, in golde the French crowne is worthe 7 pound, but at Buloigne 3 pound 10 shillings.

In Castile they vse Marvedies, the Duckett at 375 Marvedies.

At Lisborne they vse Reyes, a Duckett is 400 Reyes.

At Noremberg, Frankfort, and other places in Germanie, they vse Centiers, whereof 60 is a Florentine.

At Antwarpe they vse l. s. d.

## Questions of carying marchandize by lande.

I f a man pay for 24 C carriage 28 miles 20 Shillings, what shall he pay for the carriage of 40 C 49 miles. facit.

If 24 miles 20 Shillings, what shall 40 mile.  
facit 33 Shillings 4 pence.

If 28 mile 33 Shillings 4 pence, what 49 miles.

## The Pathvay to knowledge.

A Merchant buieth Hie at Amsterdam for 34 pound Flemish the last. and he sendeth it to London, the freight and charges whereof cometh to 8 pound Flemish. The question is, the exchange being at 33 Shillings 4 pence Flemish, for twenty Shillings Starling, what the last of Hie stood him in at London.

If 23 Shil. 4 pence, be 20 Shil. Starling, what shall 42 pound Flemish be. facit 25 l. 4 s. Starling.

A Merchant buieth linnen cloth for 30 Shillings the péece, containing 40 elles, which he sendeth unto Parris, and payeth for the charges thereof 18 pence a péece. The question is, what the péece standeth him in at Parris, accompting the exchange 6 Shillings the crowne, and each crowne is 60 sols touernois, accompting 12 deneres to each sols. The question is, what the péece will stand him in at Parris in French money.

If 6 Shillings be 60 sols, what is 31 Shillings 6 pence.

72	378	12	21	
	60	62	1060	frankes.
	000	316	22680	(315
	2268	378	7222	
	22680		77	
			facit 215 Frankes.	

A Merchant at Roane buieth spice 9 frankes the pound, and sendeth it to Amsterdam, and paieth the charges thereof 1 sols French money, and the exchange from Roane to Amsterdam is 60 sols, for a crowne of the value of 10 Shillings Flemish. The question is, what the pound cost him in Amsterdam in Flemish money, and what it is Starling.

If 60 sols be 10 Shil. Flemish, what shall 9 frankes 1 sols be. facit 30 s. Flemish  $\frac{2}{3}$ , that is 18 s. 1 penny Starling.

A Merchant buieth in London 448 pound of Cinamon at 4 Shillings the pound, which he sendeth to Danske, whereof all the

# The Pathway to knowledge.

the charges amounteth unto 8 shillings sterling: the exchange from London to Danske is 135 polish grose, for a Dollar of 30 stivers, that is 3 shilling sterling. The question is, what it will stand him in a pound Danske money.

If 1 pound cost 4 shillings, what will 448 pound cost?

facit with charges 90 l. 13 s. 0 d. sterling.

If 3 s. sterling, be 135 pol. grose, what is 90 l. 3 s. sterling.

facit 81135 polish grose.

If 448 pound, cost 81135 polish grose, what shall one.

facit 181 polish grose, and  $\frac{4}{11}$  parts.

A Merchant buieth Sugar at London for 8 pence the pound, and he sendeth it to Amsterdam, whereof the charges riseth to one penny the pound, and a 100 pound sterling is in Amsterdam 133 pound 6 shillings 8 pence. The question is, if he bue 1000 pound at that rate, what it will stand him in at Amsterdam the exchange, being at 33 shillings 4 pence the pound Flemish, for 20 shillings sterling.

If 20 s. sterling be 33 s. 4 d. flem. what shall 750 star. be?

1000  
9  
 500  
250  
 750

12  
40  
 20  
240

12  
66  
 324  
300

20  
000  
 1500  
15000  
 12  
30000  
 150000  
180000  
 300  
54000000

xx  
 2  
 x610  
 54000000  
 84000000  
 844444  
 2222

xxxx  
 x0960  
 225000  
 122222  
 xxx

(1875) 0 fle.  
 938 l. 10 s.

If 1000 pound cost 938 pound 10 s. flem. what shall 1 pound.

Multiply and deuide, as in the rule of threes.

## The Pathway to knowledge:

A merchant in London taketh 300 pound at interest, at 12 l. per cento in the yeare, for the which money he buieth Berley at 20 s. the peece, and sendeth them to Hamborough, and payeth for the charges thereof 20 s. and there he selleth the peece for 18 Dollars, at 30 shillings Lubs the Dollar, ready money, with the which he buieth Spice for 4 s. the hundred waight, and that he sendeth to Danske, for the which he payeth charges 4 Dollars, there he selleth it for 12 polish Gilders the hundred waight, at 132 polish groles for 20 s. Flemish, where he buieth cloth at 11 s. Flemish the elle, and sendeth it to Amsterdam, the charges wherof cost 12 shil. where he selleth the elle for 14 s. the elle, and when he hath payde the interest of his money for 6 moneths, I demaund what he winneth or loseth by that money.

300 l.  
I  
301

Say if 20 s. be one peece, what shall 301 pound.

facit 301 peces.

If 1 be 18 Dollars, what 301 peces. facit 5418 Dollars at 30 shil. the Dollar, out of that he must take 4 Dollars for charges to Danske. Rests 5414 Dollars.

If 4 s. be 100 waight, what shall 5414 Dollars be.

facit 135350 pound waight.

If 100 l. be solde for 12 gilderns Lubs, what shall 135350 l. be solde for. facit 16242 Gilderns lubs.

If 132 polish groles be 20 s. what shall 357324 pol. groles.

facit 54140 shil. Flemish,

If 11 s. Flemish, be 1 elle, what 54140 s. Flemish.

facit 4921 elles  $\frac{3}{4}$ .

6888(2(3444  
20000  
222

38  
3426  
300  
3126

P  
2  
20  
19  
1  
10

14  
19684  
4921  
68894  
7  
3.6  
68894.6  
12  
68882.6

facit he winneth 3126 gild. Flemish.

The

# The Pathvvay to knowvledge.

## The rule of fellowvship.

**T**wo Merchants are in company, the one putteth in 300 pound, the other 500 pound, and with that money they have gained 240 pound. The question is, what each man must haue.

If 800 pound gaine 240 pound, what shall 300 pound gaine?  
facit 90 pound.

If 800 pound gaine 240 l. what shall 500 pound gaine?  
facit 150 pound.

Three Merchants are in company, whereof the first layeth in 300 pound for 4 moneths, the second 400 pound for 5 moneths, the third 540 pound for 6 moneths, and they haue gained 248 pound, what is each mans part.

300 l.	400 l.	540 l.	1200
4 mon.	5	6	2000
<hr/>	<hr/>	<hr/>	<hr/>
1200	2000	3240	3240
			<hr/>
			6440

If 6440 gaine 248 pound, what shall

1200	—	facit 46 l. $\frac{1160}{6440}$ .
2000	—	facit 77 $\frac{120}{6440}$ .
3240	—	facit 124 $\frac{4960}{6440}$ .

Three Merchants are in company, and all together lay in 560 pound, wherewith they gaine 150 pound, whereof the first taketh 40 pound, the second 50 pound, and the third 60 pound. The question is, what each man had in stock.

If 150 pound, be 560 pound, what shall

40 l.	—	facit 149 l. $\frac{1}{7}$ .
50 l.	—	facit 186 l. $\frac{1}{7}$ .
60 l.	—	facit 224 l.
		<hr/>
		560—0

Three

## The Pathvay to knowledge.

Three Merchants in company haue gained 498 pound, which they deuise among them in this sort, that as the first hath  $\frac{1}{3}$ , the second shall haue  $\frac{1}{4}$ , and as the second taketh  $\frac{1}{4}$ , so shall the third haue  $\frac{1}{5}$  parts. The question is, what each man shall haue of the gaine.

If  $\frac{1}{3}$  second,  $\frac{1}{4}$  third,  $\frac{1}{5}$  second. facit  $\frac{1}{20}$  for the third man.  
Now take a number wherein the  $\frac{1}{3}$  .  $\frac{1}{4}$  .  $\frac{1}{5}$  may be found,  
as 24.

If 30 l. be 498 l. what 8 l. facit 132 l.  $\frac{1}{3}$  for the first.  
what 12 l. facit 199 l.  $\frac{1}{4}$  for the second.  
what 10 l. facit 166 l. for the third.

Two Merchants in company, the first put in 245 pound for 6 moneths, the second put in 130 pound, and they gaine 70 pound, whereof the first must haue 50 pound, and the second 20 pound. The question is, what time the second had his money in stocke.

If 245 pound, gaine 50 pound, what shall 130 pound gaine?  
facit 26 pound,  $\frac{2}{5}$  parts.

If 26  $\frac{2}{5}$  parts, require 6 moneths, what 20 pound.  
facit 4 moneths, and  $\frac{1}{5}$  parts.

Two Merchants are in company, the first put in 245 pound for 6 moneths, and gaineth 50 pound, how much money must the second put in, to gaine  $\frac{2}{5}$  parts 20 pound in 4 moneths, and  $\frac{1}{5}$  parts.

If 50 pound, 245 pound, what 20 pound. facit 98 pound.

If 4 moneths  $\frac{1}{5}$  parts, 98 pound, what 6 moneths.  
facit 130 pound, that the second must put in.

Four Merchants haue bought a ship for 3600 pound, whereof A must pay  $\frac{1}{4}$  part, B  $\frac{1}{5}$  part, C  $\frac{1}{6}$  part, and D  $\frac{1}{10}$  part. The question is, how much each man shall paye for the said ship. Seeke a number wherein the like parts may be, as 60 pound: Then say,

If

# The Pathway to knowledge.

If 57 pound be 3600  
pound, what

20 l.  
15 l.  
12 l.  
10 l.

facit 1263 l.  $\frac{1}{3}$  for A.  
facit 947 l.  $\frac{2}{3}$  for B.  
facit 757 l.  $\frac{1}{3}$  for C.  
facit 631 l.  $\frac{1}{3}$  for D.

The said ship hath made a voyage, and there is gotten all charges deducted by the said ship 240 pound, what must each honour haue.

If 57 pound gaine 240  
pound, what shall

20 l.  
15 l.  
12 l.  
10 l.

facit 84 l.  $\frac{4}{11}$  for A.  
facit 63 l.  $\frac{3}{11}$  for B.  
facit 50 l.  $\frac{2}{11}$  for C.  
facit 42 l.  $\frac{1}{11}$  for D.

Foure Honours of a ship haue set her forth, whereof A hath paide  $\frac{1}{4}$ , B hath paide 300 pound, C hath paide 150 pound and D hath paide the  $\frac{3}{4}$  parts of the whole. The question is, how much A and D haue paide for their parts in money, and what B and C must haue of the same ship, each man a part, and what the whole ship cost the setting forth.

A  $\frac{1}{4}$   
D  $\frac{3}{4}$

B 300  
C 150

450 l.

Say, if  $\frac{1}{4}$  be  $\frac{1}{4}$  what  $\frac{3}{4}$ . facit 1950 pound, whereunto you must adde 450 pound that B and C payd, and it maketh 2400 pound for the charges of the whole ship.

A  $\frac{1}{4}$  of 2400 (600 for A that he paide.

444

D  $\frac{3}{4}$  of 2400 l.

58  
21600 (1350 l. for D that he paide.

16666

xxx

21600

facit  $\frac{1}{4}$  part for B. And  $\frac{3}{4}$  part for C.

Two Merchants are in company, whereof the first put in 200 pound more then the second, they haue together gained 150 pound,

where

where

## The Pathway to knowledge.

whereas, the first taketh 100 pound. The question is, what each man put in, you see that the first put in 200 pound more then the second, therefore he must haue 50 pound more gaine then the second, therefore say:

If 50 pound gaine, must haue 200 pound, what 100 pound,  
facit 400 pound for A.

If 50 pound gaine, must haue 200 pound, what 50 pound,  
facit 200 pound for B.

A Merchant being dead oweth to 3 men 1500 pound, that is, to A 400 pound, to B 500 pound, and to C 600 pound, and all his goods are but 300 pound, what shall each man haue for his part.

If 1500 l. be 300 l. what	{	400 l.	facit 80 l. for A.
		500 l.	facit 100 l. for B.
		600 l.	facit 120 l. for C.

Two Merchants are in company, A putteth in 500 pound, and at 4 moneths end he taketh out of his stock 240 pound, and letteth the rest continue in stock 8 moneths longer, B putteth in 250 pound, and at 5 moneths end he putteth in more 300 pound, and continueth the same in stock 7 moneths, their gaine is 240 pound, how much must each man haue thereof.

A	500	4 mon.	2000
	240		
	260	8 mon.	2080
			4080

B	250	5 mon.	1250
	300		
	550	7 mon.	3850

If 9180 gaine 250 l. what	{	4080	facit 111 l. $\frac{2}{3}$ for A.
		5100	facit 138 l. $\frac{2}{3}$ for B.

Two Merchants are in company, A putteth in 500 pound, and at 4 moneths he taketh out 240 pound, and letteth the rest continue 8 moneths more, B putteth in 250 pound, and at 5 moneths end putteth in 300 pound more, and letteth all his money continue till 7 moneths end, and at their end of accompt, A findeth that he hath gained 111 l.  $\frac{2}{3}$ . The question is, what B hath gained.

A 500

## The Pathway to knowledge.

A 500l. 4 men. 2000

240

260 8 men. 2080

4080

B 250l. 5 men. 1250

300

550 7 men. 3850

5100

If 4080, III l.  $\frac{2}{7}$ , what 5100. facit 138 l.  $\frac{2}{7}$  for B his part.

Two merchants are in company, A putteth in 200 pound, and at two moneths he taketh out 100 pound, and 6 moneths after the taking out of that money he putteth in more 250 pound, and continueth with the same in company till the yeares end, B putteth in 600 pound, and at 4 moneths he taketh out 200 pound, and 3 moneths after that first taking out, he taketh out 150 pound more, and letteth the rest continue in company till the yeare be out, and their gaine together is 320 pound, what shall each man haue thereof.

A 300l. 2 men. 600

$\frac{300}{2}$   
 $\frac{300}{2}$   
 $\frac{300}{2}$

6 mon. 1200

4 men. 1800

3600

B 600l. 4 men. 2400

$\frac{600}{4}$   
 $\frac{600}{4}$   
 $\frac{600}{4}$

3 mon. 1200

5 mon. 1250

4850

4850

3600

8450

If 8450, 320 l. what 3600 facit 136  $\frac{1}{11}$  for A.

If 8450, 320 l. what 4850 facit 183  $\frac{1}{11}$  for B.

Two merchants are in company, A putteth in 400 pound for a certaine time, and he gaineth 50 pound, B putteth in a summe of money for 5 moneths, and he gaineth likewise 50 l. and they finde that each of them hath gained 20 pound per cento in the yeare. The question is, how long A continued in company, and how much money B put in to stock.

If 100 pound, 20 pound, 400 l. for A. facit 80 l.

If 80 pound 12 moneths, 50 pound. facit 7 moneths  $\frac{1}{2}$ , that

A continued in company.

If 5 moneths 400 pound, 7 moneths  $\frac{1}{2}$ . facit 600 pound

that B put into stocke.

It y

Two

## The Pathvway to knowvledge.

Two Merchants are in company, B putteth in 200 pound more then A, B continueth in stocke 5 moneths, and A 7 moneths  $\frac{1}{2}$ , and they gaue one as much as the other. The question what each man put in, seeing that they gaue alike. Then it followeth, that the first mans money being multiplied by his time, it sheweth what it was, as also the second mans being multiplied by his time both the like, by the same reason it followeth, that the times must bee the like, as 5 moneths to 7 moneths  $\frac{1}{2}$ . Therefore subtract 5 moneths from 7 moneths  $\frac{1}{2}$ , resteth 2 moneths  $\frac{1}{2}$ . Now as 2 moneths  $\frac{1}{2}$ , are lesse then 5 moneths, so is 200 pound of B more in proportion then the stocke of A. Then say:

If 2 moneths  $\frac{1}{2}$  200 pound, what 5 moneths.

facit 400 pound for A.

If 2 moneths  $\frac{1}{2}$  200 pound, what 7 moneths  $\frac{1}{2}$ .

facit 600 pound for B.

Three are in company, A will haue  $\frac{1}{7}$  part of the gaue, and he continueth with his stock 5 moneths, B layeth in likewise a summe of money for 8 moneths, C layeth in 400 pound for 7 moneths, and he taketh  $\frac{2}{7}$  of the gaue. The question is, how much the first and second put in.

400	If $\frac{2}{7}$ be 2800 pound, what $\frac{1}{7}$ . facit 840, which
7	deuide by 5 moneths that he laide in his money, it
2800	maketh that A put in 168 pound, then adde $\frac{2}{7}$ of
	gaue that C had, and the $\frac{1}{7}$ of gaue that A had,
	and then make $\frac{1}{7}$ which subtract out of 1 whole, there resteth
	$\frac{6}{7}$ for B part of the gaue. Then say:

If  $\frac{2}{7}$  be 2800, what  $\frac{1}{7}$ . facit 560, which deuide by 8 moneths, the time that he had his money in stocke, it maketh 70 pound, that B put in to the stocke.

Three Merchants are in company, A putteth in 168 pound for 5 moneths, B putteth in a summe of money for 8 moneths, C putteth in 400 pound for a certaine time, they haue gaue 90 pound, whereof A must haue 18 pound, B 12 pound, and C

## The Pathvay to knowledge.

60 pound. The question is, how much money B put in, and how long time C continued in company.

$$\begin{array}{r} 168 \text{ l.} \\ 5 \\ \hline 840 \end{array}$$

If 18 pound for A, be 840, what shall 12 pound for B. facit 560, which deuide by 8 moneths, it maketh 70 pound for B stocke: then say, if 18 l. 840, 60. facit 2800, which deuide by 400 pound his stocke put in, it maketh 7 moneths that C continued in company.

Thre are in company, A and B haue together 238 pound, B and C haue together 470 pound, C and A haue together 568 pound, A continueth 5 moneths in company, B continueth 8 moneths, and C continueth 7 moneths, they haue gained together 90 pound. The question is, how much each man hath put in, and what each man must haue of the gaine. Adde 238 pound, 470 pound, and 568 pound together, and they make 1276 pound, in the which summe each mans money is twice nominated: therefore deuide 1276 in 2, which is one lesse then the company, and it maketh 638 pound, the summe of all their whole stocke, out of the which subtract 470 pound that B and C laide in, then there resteth 168 pound for A that he put in, then subtract 568 pound that A and C put in, out of 638 pound there resteth 70 pound for B that he put in. Then subtract 238 pound that A and B put in, out of 638 pound, there resteth 400 pound that C put in. Now to finde out each mans gaine, doe as followeth.

840	168 l.	70 l.	what	400 l.
560	5	8		7
2800	840	560		2800
4200				

Say if 4200, 90 l. what {

 840 facit 18 l. for A.  
 560 facit 12 l. for B.  
 2800 facit 60 l. for C.

Thre are in company, and they haue layde in all together.

It is

638 l.

## The Pathway to knowledge.

638 pound, where with they haue gained 90 pound, whereof A taketh 18 pound, and hath continued in stock 5 moneths, B taketh 12 pound, because his stocke was in 8 moneths, and C taketh 60 pound, because his stocke was in 7 moneths. The question is what each man put in.

$$\begin{array}{rcl} 18 & : & 5 \text{ moneths} \\ 12 & : & 8 \text{ moneths} \\ \hline 60 & : & 7 \text{ moneths} \end{array} \quad \begin{array}{l} 3 \frac{1}{2} \\ 1 \frac{1}{2} \\ 8 \frac{1}{2} \end{array}$$

$$\begin{array}{rcl} 313 \frac{1}{2} 638 \text{ l.} & \left\{ \begin{array}{l} 3 \frac{1}{2} \\ 1 \frac{1}{2} \\ 8 \frac{1}{2} \end{array} \right. & \begin{array}{l} \text{facit } 168 \text{ l. for A.} \\ \text{facit } 70 \text{ l. for B.} \\ \text{facit } 400 \text{ l. for C.} \end{array} \end{array}$$

Three are in company, A putteth in 168 pound, B 70 pound, and C 400 pound, where with they gaine 90 pound, whereof A hath 18 pound, B 12 pound, and C 60 pound: they continued each man in company a certaine time a part, and the time of their continuance was in all 20 moneths one with the other. The question is, how long each man continued in company: Deuide each mans stocke by his gaine, and the production set last, the moneths being in the middle,

$$\begin{array}{r|l} 18 & 3 \\ \hline 168 & 28 \end{array} \text{ A}$$

$$\begin{array}{r|l} 12 & 6 \\ \hline 70 & 35 \end{array} \text{ B}$$

$$\begin{array}{r|l} 60 & 3 \\ \hline 400 & 20 \end{array} \text{ C}$$

Then seeke a number wherein the parts aforesaid are, as 140 pound, and say:

$$\begin{array}{rcl} \text{If } 60 \text{ l. } 20 \text{ mon. what} & \left\{ \begin{array}{l} 15 \\ 24 \\ 21 \end{array} \right. & \begin{array}{l} \text{facit } 5 \text{ moneths A.} \\ \text{facit } 8 \text{ moneths B.} \\ \text{facit } 7 \text{ moneths C.} \end{array} \end{array}$$

Four are in company, whereof A. B. and C put in 573 l. B. C. D. put in 530 pound, C. D. and A put 468 pound, D. B. and A together 521 pound, A continueth 4 moneths, B 6 moneths, C 8 moneths, and D 9 moneths, they haue gained 148 pound. The question is, how much each man shall haue for his part of the gaine, also how much each man put in. And the four summes together they make 2091 pound. In the which

summes

## The Pathway to knowledge.

summes each mans money is accompted 3 times, therefore de-  
uide the same 2091 pound by 3, it maketh 697 pound for the  
whole stocke, out of the which subtract for A. B. C. 572 pound  
resteth 125 pound for D stock. Then subtract 530, for B. C.  
D. out of 697 pound, resteth 167 pound for A stocke, also take  
468 pound for C. D. A. out of 697 pound resteth 229 pound  
for B stocke: then take out 521 pound for D. B. A. out of 697  
pound, resteth 176 pound for C stocke.

A	B	C	D	
167	229	176	125	668
4	6	8	9	1374
668	1374	1408	1125	1408
				1125
				4575

If 4575, 148, what { 668 facit 21  $\frac{2732}{4777}$  for A.  
1374 facit 44  $\frac{634}{111}$  for B.  
1408 facit 45  $\frac{3102}{2177}$  for C.  
1125 facit 36  $\frac{24}{11}$  for D.

Four Merchants haue gained 712 pound, which they decide  
in such manner, that the  $\frac{2}{3}$  part of A shall be as much as the  $\frac{2}{3}$   
parts of B, and the  $\frac{2}{3}$  parts of B as much as the  $\frac{4}{5}$  parts of C,  
and the  $\frac{4}{5}$  parts of C, as much as the  $\frac{6}{7}$  parts of D: The que-  
stion is, how much each man shall haue for his part. Seeke a  
number wherein the parts before specified are, set — 36 for A.

36  $\frac{2}{3}$  is 18 l. —  $\frac{2}{3}$ . 18 . 1. facit 27 for B.  
27  $\frac{2}{3}$ . 20  $\frac{2}{3}$ . —  $\frac{4}{5}$ . 20  $\frac{2}{3}$ . 1. facit 25  $\frac{1}{11}$  for C.  
25  $\frac{1}{11}$ . 21  $\frac{1}{11}$ . —  $\frac{6}{7}$ . 21  $\frac{1}{11}$ . 1. facit 24  $\frac{11}{14}$  for D.

If 112  $\frac{11}{14}$ . 712 l. what { 36 facit 226  $\frac{724}{111}$  for A.  
27 facit 170  $\frac{124}{111}$  for B.  
25  $\frac{1}{11}$  facit 159  $\frac{483}{111}$  for C.  
24  $\frac{11}{14}$  facit 155  $\frac{111}{11}$  for D.

Prooffe.

113  $\frac{1}{11}$  is the  $\frac{2}{3}$  of A, which is also the  $\frac{2}{3}$  for B.

127  $\frac{1}{11}$  is the  $\frac{4}{5}$  for B, which is also the  $\frac{4}{5}$  for C.

133  $\frac{1}{11}$  is the  $\frac{6}{7}$  for C, which is also the  $\frac{6}{7}$  for D.

Three

## The Pathvay to knowledge.

Three Merchants haue fraughted a ship, wherein A hath 40 tunnes of Rie, B hath 10 tunne of Rye and 40 tunne of Alhes, and C hath 20 tunne of wheate, the said ship being at sea in foule weather, was forced for sauegard of the ship and goods to throwe ouer-board 20 tunnes of Alhes, and 4 tunne of Wheates: The question is, what the losse is vpon the 100, also how much each man must beare of the losse, the Rie being rated at 35 pound, 10 shillings the tunne, the Alhes at 10 pound the tunne, and the wheate 42 pound  $\frac{1}{2}$  the tunne, and the ship with his tackling at 3000 pound.

tun.	tun.	tun.	tun.
40	10	40	20
35 $\frac{1}{2}$	35 $\frac{1}{2}$	10	42 $\frac{1}{2}$
<u>1420l.</u>	<u>355l.</u>	<u>00</u>	<u>845l.</u>
9940l.	2485	40	5915
		<u>400l.</u>	
		2400	

### The losse.

20 tun Alhes.	4 tun Wheat.
10	42 $\frac{1}{2}$
<u>200</u>	<u>169l.</u>
6	7
<u>1200</u>	<u>1183</u>
A 1988	
B 2897	
C 1183	
Ship 3000	
<u>9068</u>	

Say, if 9068 lose 1436 pound 12 shillings, what shall 100 pound lose: it facit 15 pound, 17 shillings, and one penny,  $\frac{1177}{1577}$  losse in the 100 pound.

Then

# The Pathvay to knowledge.

Then say, if 9068 } 1988 facit 314  $\frac{10761}{11333}$  for A.  
 lose 1436 l.  $\frac{1}{2}$  what } 2897 facit 458  $\frac{41411}{47333}$  for B.  
 } 1183 facit 187  $\frac{18902}{47333}$  for C.  
 } 3000 facit 475  $\frac{1625}{5333}$  for the ship.

A Merchant hath 390 pound, to put in trade of Merchandise, and to that end he agreeth with a Factor, that if the Factor put 70 pound into stocke. he shall haue  $\frac{1}{4}$  part of the gaine. The question is, what is allowed him for his paines.

If  $\frac{1}{4}$  390.  $\frac{1}{4}$  facit 130  
 70  
 60

facit 60 l. allowed him for his paines.

A Merchant giueth a Factor 390 l, therewith to trade in merchandize, and the Factors paines is accompted 60 pound: how much money must the Factor put in, that he may haue the  $\frac{1}{4}$  part of the gaine.

If  $\frac{1}{4}$  — 390 —  $\frac{1}{4}$  facit 130 l.  
 60  
 070

It maketh 70 l. that he must put in.

A Merchant hath 400 pound to trade in merchandize, hee agreeth with a Factor, that if he put in 90 l. to the stocke, then he shall haue the  $\frac{1}{4}$  part of the gaine for his paines. After, an other merchant desireth to put in 350 pound to the same stocke, and promisseth likewise to obserue the same agreement made with the Factor, at the end of a yeare they finde they haue gained 250 l. The question is, how much each man shall haue for his part, and what the Factors paines is esteemed.

$\frac{1}{4}$  400. what  $\frac{1}{4}$  200 l.  
 90  
 facit 110 l. for the Factors paines. 110

A

Say

**The Pathway to knowledge.**

Say, if 950 L. 250 L. what  $\left\{ \begin{array}{l} 400 \text{ l. facit } 105 \text{ l. } \frac{1}{4} \text{ for } A. \\ 350 \text{ l. facit } 92 \text{ l. } \frac{1}{4} \text{ for } B. \\ 200 \text{ l. facit } 52 \text{ l. } \frac{1}{4} \text{ for the factor.} \end{array} \right.$

Two Merchants are in company, A putteth in 400 pound, B 650 pound, which they deliuer to a Factor, to whome they promise for his paines  $\frac{1}{2}$  part of the gaine. presently after that the Factor putteth into company 250 pound, and they gaine in all 240 pound, what shall each man haue of the gaine. Take  $\frac{1}{2}$  part of the gaine, it maketh 40 pound for the Factors paines, which subtract out of 240 pound, resteth 200 pound, that must be parted amongst them, then say :

If 1300 pound, gaine } 400l. facit 61l.  $\frac{1}{7}$  for A.  
200 pound, what shall } 650l. facit 100 for B.  
250l. facit 38  $\frac{6}{7}$  for the Factor.

A Merchant delivereth 500 pound to his Factor, and the Factor putteth thereto 200 pound, whereof he taketh  $\frac{1}{3}$  part of the gaine for his paine. The question is, what each man shall have of the gaine.

500 If  $\frac{1}{2}$  700l. what  $\frac{2}{3}$ . facit 100l. for his paines.  
 200  
 ---  
 700

200  
 ---  
 300

3: 800 l. be 1, what  $\left\{ \begin{array}{l} 300 \\ 500 \end{array} \right.$  facit  $\frac{1}{2}$  for the fact<sup>or</sup>.  
 facit  $\frac{1}{3}$  for the Merchant.

Three Merchants are in company, A putteth in 400 pound, B 500 pound, and C 600 pound, the same money they deliuer vnto a Factor, with promise to giue him  $\frac{2}{7}$  part of the gaines: now when 2 moneths were past, the Factor put into the same Stocke 300 pound, & as they make accompt for a whole yeare, it is found that they haue gained 620 pound. The question is, how much the Factor is to haue for his part, also what each of them must haue. Take the  $\frac{2}{7}$  part of the gaine, which is 124 l. for the factors part, out of the 620 l. gaine, and there resteth

496

## The Pathway to knowvledge.

496 l. which must be parted among the 3 Merchants and the Factor, so therefore as followeth.

400 A	500 B	600 C	300 factor.	4800
<u>12</u>	<u>12</u>	<u>12</u>	<u>10</u>	6000
4800	6000	7200	3000	7200
				3000
				21000

If 21000 gaue 496 pound, what shall

4800	facit 113 $\frac{1}{2}$ for A.
6000	facit 141 $\frac{1}{2}$ for B.
7200	facit 170 $\frac{2}{3}$ for C.
3000	facit 70 $\frac{1}{2}$ for the Factor.

Then the factor had 194 l.  $\frac{1}{2}$  for his whole part.

Two Merchants are in company, whereof A putteth in 700 pound, and B 760 pound, for this money they buye 26 tun of Alhes, viz. 10 tun at 50 pound the tun, and 16 tun at 60 pound the tun, and each man taketh 13 tun for his part, how many last of each sort shall each of them take?

Say that A taketh 1  $\frac{1}{2}$  c of tuns, at 50 pound the tun, which muste cost him 50  $\frac{1}{2}$  c. now he wanteth yet 12  $\frac{1}{2}$  c tuns, at 60 pound the tun, which cost 780 pound 60  $\frac{1}{2}$  c, which adde to 50  $\frac{1}{2}$  c. it maketh 780, 10  $\frac{1}{2}$  c. as 700 pound and 1  $\frac{1}{2}$  c. is like 8 tuns at 50 pound the tun, so he must yet haue 5 tuns at 60 pound. it maketh 300 pound, and 8 tun at 50 pound, is 400 pound. that is together 13 tunnes. for 700 pound, and there shall yet rest 2 tuns at 50 pound for B, and a 12 tuns 60 pound the last, that is 13 last for 760 pound for B.

Three Merchants have bought a house for 1200 pound, A saith to B, give the halfe of your money, so shall I haue as much as will pay for the whole house, B saith to C, give me  $\frac{2}{3}$  parts of your money, so shall I haue as much as will paye for the whole house, and C saith to A give me  $\frac{1}{4}$  parts of your money.

## The Pathway to knowledge.

money, so shall I have as much as will pay for the house. The question is, how much money each of them had.

Say, that A had  $1\text{ £}$ , then C had  $1200\frac{1}{4}\text{ £}$ , out of the which subtract  $\frac{1}{4}$ , is  $800\text{ l. } \frac{1}{4}\text{ £}$ , resteth  $\frac{1}{4}\text{ £} + 400$  for B money, out of the which take the  $\frac{1}{4}\text{ £} + 200$ , which add to A money, which is  $1\text{ £}$ , so there is  $1\frac{1}{4}\text{ £} + 200$ , as  $1200$  pound, take out of each summe  $200$  there remaineth  $1\frac{1}{4}\text{ £}$ , as  $1000\text{ l.}$  and  $1\text{ £}$  be like  $800$  pound for the money of A, and for that  $1\text{ £}$  is  $800\text{ l.}$  Then B had for his part  $\frac{1}{4}\text{ £} + 400$ , that is also  $800$  pound, and C must have for his part  $1200\frac{1}{4}\text{ £}$   $600$  pound.

Three merchants have a summe of money to divide, whereof the first must have  $\frac{2}{3}$  of the whole summe  $+ 6$ . The second  $\frac{1}{3}$  of all the sum  $2$ , and the third the rest, which is  $25$  pound more then the first, what is the whole summe, and what is each mans part.

Say, for the whole summe  $1\text{ £}$ , whereof the first taketh  $\frac{2}{3}\text{ £} + 6$ : the second  $\frac{1}{3}\text{ £} 2$ , which subtract out of the whole sum, there resteth yet  $\frac{1}{3}\text{ £} 4$  for the third: and because the saide third man hath  $25$  pound more then the first, which hath  $\frac{2}{3}\text{ £} + 6$ , they make with  $25$  pound in one summe  $\frac{2}{3}\text{ £} + 31$  pound, as  $\frac{1}{3}\text{ £} 4$  and  $1\text{ £}$ , is like  $420$  pound for all the summe, out of the which the first taketh the  $\frac{2}{3}$  part  $+ 6$ , which is  $146\text{ l.}$  The second taketh  $\frac{1}{3}$  part  $2$ , which is  $103$  pound, and the 3 taketh  $171$ , which is the rest, and maketh  $25$  pound more then the first.

## Questions of Barter.

Two Merchants Barter together, the one hath  $14\text{ C}$  of Hempe, at  $17$  pound  $\frac{1}{2}$  the hundred: the other hath clothes at  $16$  pound the peece. The question is, how many clothes he must deliuer for the  $14$  hundred of Hempe.

If  $1\text{ C}$  cost  $17\text{ l. } \frac{1}{2}$ , what shall  $14\text{ C}$  cost? facit  $245\text{ C.}$

If  $16\text{ l.}$   $1$  cloth, what  $245\text{ l.}$  facit  $15$  clothes  $\frac{1}{2}$  parts.

Two

## The Pathway to knowledge.

Two Merchants barter together, the one hath Salte at 18 pound the hundred, which he selleth in barrells at 18 pound  $\frac{1}{2}$ , the other hath Tallowe at 23 shillings the hundred. The question is howe ere he shall rate his Tallow in barter, that their ware may be priced alike.

If 18 pound be 18 pound  $\frac{1}{2}$ , what shall 23 shillings.  
facit 23 shillings 7 pence  $\frac{2}{3}$ .

Two Merchants barter, the one hath 15 last of Ale, at 30 pound the last, and the other hath 40 last of Pease at 21 pound the last. The question is, which of them must have money of the other, and how much it is.

If 1 last cost 30 pound, what shall 15 last.  
facit 630 pound.

If 1 last 21 pound, what 40 last.  
facit 840 pound.

840
630
210

It maketh that the one must pay to the other  
in ready money 210 l.

Two Merchants barter, the one hath 18 hundred pound waight of tal:owe at 20 shillings the hundred, and in barter he will sell it for 24 shillings: the other hath Sugar at 7 pence the pound ready money. The question is, how many pound he must deliuer for the tallowe, facit.

If 1 C. 24 s.	18 C
	24
	72
	36
	432

facit 432 shillings in barter.

If 20 C be 24 shillings, what 7 pence be. facit 8 d.  $\frac{2}{3}$  for a pound of Sugar in barter.

If 8 d.  $\frac{2}{3}$  be 1 pound, what shall 432 shil. be. facit 1028 l.  $\frac{2}{3}$   
Sugar, that he must giue for 18 C of tallowe.

L 3

Two

## The Pathway to knowledge:

Two Merchants barter, A hath 20 tunnes of ashes at 54 l. the tunne, which he rateth in barter at 55 l.  $\frac{1}{2}$ , B hath 117 C  $\frac{2}{3}$  of Allumne, at 12 pound  $\frac{1}{4}$  the hundred ready money. The question is what price his Allumne shall beare in barter, and which of them must pay money to the other.

If 1 tun 54 pound, what 20 tunne. facit 1080 pound ready money for Ashes.

If 1 tun 55  $\frac{1}{2}$ , what 20 tun. facit 1110 pound in barter for Ashes.

Substract 1080 pound, out of 1110 pound, resteth 30 pound that he rateth his ware in barter.

1 C 12 l.  $\frac{1}{4}$ , what 117 pound  $\frac{2}{3}$ , facit 1440 pound money for Alume.

Therevnto adde 30 pound that A rateth his ware hyper at then it cost, and it maketh 1470 pound that he must make the price to allow of his Allumne in barter.

If 117 C  $\frac{2}{3}$  be 1470 pound, what 1 C. facit 12 pound  $\frac{2}{3}$  that he must sell the hundred of Allumne for in barter, now if you will know which of them must receive money of the other, then substract 1110 pound, out of 1470 pound resteth 360 l. that A must give vnto B.

Two Merchants barter, A hath 20 tunne of Ashes at 54 pound the tun, which in barter he selleth at 55 pound  $\frac{1}{2}$ , B hath Allumne at 12 pound  $\frac{1}{4}$  the C, and he will have 360 pound ready money of A, how must he rate the hundred of Allumne in barter, and how much Allumne must he deliver for the said 20 tun of Ashes, and 360 pound ready money.

If 1 tun 54 pound, what 20. facit 1080 pound.

If 1 tun 55 pound  $\frac{1}{2}$ , what 20. facit 1110 pound.

1080 in money.

1110 in barter.

360

360

1440

1470

If 1440 be 1470, what shall 12 l.  $\frac{1}{4}$ . facit 12 l.  $\frac{2}{3}$ .

If 12 pound  $\frac{1}{4}$  be 1 hundred. what shall 1470 pound be.

facit 117 C  $\frac{2}{3}$  C, that he must deliver for the 20 tun of Ashes, and 360 in money.

Two

## The Pathway to knowledge.

Two Merchant barter, B hath 117 hundred  $\frac{2}{3}$  of Allumne, at 12 pound  $\frac{2}{3}$  ready money the hundred, and in barter he will sell it at 12 pound  $\frac{2}{3}$ , and he will haue of A 360 pound in ready money: A hath Ashes at 55 pound  $\frac{1}{2}$  the tun in barter. The question is, how much a tun of Ashes is worth ready money, and also how many Ashes A must deliuer with the 360 pound for the said 117 hundred  $\frac{2}{3}$  of Allumne.

If 1 hundred be 12 pound  $\frac{2}{3}$ , what 117 C  $\frac{2}{3}$ .  
facit 1470 pound.

$$\begin{array}{r} 360 \\ \hline 1110 \end{array}$$

If 55 pound  $\frac{1}{2}$  be 1 tun, what 1110 tunne.  
facit 20 tun of Ashes.

If 1 C be 12 pound  $\frac{2}{3}$ , what 117 hundred  $\frac{2}{3}$  parts,  
facit 1440 pound.

$$\begin{array}{r} 360 \\ \hline 1080 \end{array}$$

If 20 tun 1080 pound, what 1 tun. facit 54 pound. that  
one tun of Ashes shall be worth ready money.

Two Merchants barter, B hath 117 C  $\frac{2}{3}$  of Allumne, and raterh the hundred in barter at 12 pound  $\frac{2}{3}$ , and he will haue of A 360 pound in ready money, A hath Ashes at 54 pound the tun ready money in barter, he selleth them at 55 pound  $\frac{1}{2}$ . The question is, how much a hundred of Allumne hath cost in ready money.

If 1 hundred be 12 pound  $\frac{2}{3}$ , what 117 hundred  $\frac{2}{3}$ .  
facit 1470 pound.

$$\begin{array}{r} 360 \\ \hline 1110 \end{array}$$

1110 to barter with A.

If 55 hundred  $\frac{1}{2}$  be 54 pound, what 1110 pound.  
facit 1080 pound.

$$\begin{array}{r} 360 \\ \hline 1440 \end{array}$$

1440 that the 117 C  $\frac{2}{3}$  cost in barter.

If 117 C  $\frac{2}{3}$  be 1440 l. what 1. facit 12 l.  $\frac{1}{2}$  ready money.

Two

## The Pathway to knowledge.

Two Merchants barter, the first hath 24 tun of meale at 30 pound the tun in barter, he selleth it at 35 pound the tun, and he will haue  $\frac{1}{4}$  part in ready money of the other Merchant, the other hath cloth at 32 pound the pence. The question is, how daie he shall rate his clothes, and how much ready money, and how many clothes he shall giue for the 24 tun of meale.

If 1 tun be 30 pound, what shall 24 tun be.  
facit 720 pound.

If 1 tun be 35 pound, what shall 24 tun be.  
facit 840 pound.

$$\begin{array}{r} 720 \\ 210 \\ \hline 510 \end{array}$$

$$\begin{array}{r} 840 \\ 210 \\ \hline 630 \end{array}$$

If 510 pound be 630 pound, what shall 32 pound, facit 39 pound  $\frac{2}{7}$  that the clothe must be rated at, and 210 l. in money must be giuen: now if you wil knowe how many clothes he must giue, say:

If 39 pound  $\frac{2}{7}$  be 1 clothe, what shall 630 pound be.  
facit 15 clothes, and  $\frac{11}{7}$  parts.

Two Merchants barter, A hath linnen cloth at 10 pence the eile ready money, and in barter at 15 pence, B hath 3200 pound of Sugar at 7 pence the pound, but he will haue of A 120 pound in ready money. The question is, what rate the Sugar must be at in barter, and how much linnen cloth A shall giue vnto B.

If 1 pound be 7 pence, what shall 3200 pound be?  
facit 1120 pound.  
120 ready money.

Selleth to barter 1000

If 10 l. be 15 d. what shall 1000 be?

facit 1500 l.

120

1620

If

## The Pathway to knowledge.

If 3200 pound be 1620 pound, what 1 pound. facit 10  $\frac{1}{2}$ .  
that 1 pound of Sugar shall be rated at in barter.

If 15 pence be 1 elle, what 1500 pound. facit 2000 elles  
that he must deliver.

Two Merchants barter, A hath 50 peeces of linnen at 20 pound the peece, which in barter he selleth at 30 pound the peece, B hath 3200 pound of Sugar at 10 pence  $\frac{1}{2}$  the pound in barter. The question is what 1 pound of Sugar cost in ready money, and which of them must pay money to the other.

If 1 peece 20 pound, what 50 peeces.  
facit 1000 pound.

If 1 peece 30 pound, what 50 peeces?  
facit 1500 pound.

Out of the which take 1000 pound, resteth yet 500 pound,  
that he selleth his linnen dearer for in barter than for  
money.

If 1 pound be 10 pence  $\frac{1}{2}$ , what 3200 pound. facit 1620 l.  
for the Sugar in barter, out of the which take 500 pound  
that A hath rated his linnen dearer at in barter, resteth  
1120 pound that B Sugar shall cost ready money.

If 3200 pound, be 1120 pound, what shall 1 pound cost?  
facit 7 pence that 1 pound shall cost ready money.

Now to know whose summe is greatest, then subtract 1500  
pound A money, out of 1620 pound B money, resteth 120  
pound that A must pay B in ready money.

Two Merchants barter, A hath Pitch at 40 pound the last,  
ready money, and he selleth it at 42 pound in barter, B hath  
Damask at 56 pence the elle ready money, how must he rate  
it in barter, that he may gaine 6 per cento more then A.

If 40 pound be 42 pound, what shall 100 pound be.  
facit 105 pound, that A gaineth in the 100.

If 100 pound be 111 pound, what 56 pound.  
facit 62 pence  $\frac{1}{4}$  parts of a penny.

## The Pathway to knowledge.

Two Merchants barter, A hath Witche at 40 pound the last ready money, and in barter he rateth it at 42 pound the last, B hath Damaske at 56 pence the elle, and he rateth it at 62 pence  $\frac{4}{7}$  in barter, how much gaineth the one more then the other in the 100 pound.

If 56 pence be 62 pence  $\frac{4}{7}$ , what 100 l. facit 111 l. B.

If 40 pound be 42 l. what 100 l. facit 105 l. A.

006 l.

So that B getteth 6 per cento more than A.

Two Merchants barter, A hath Witche at 40 pound the last money, and at 42 pound in barter, B hath Damaske in barter at 62 pence  $\frac{4}{7}$ , and he findeth 6 per cento gained more then A hath gotten, what did an elle of the Damaske cost ready money.

If 40 pound be 42 l. what 100 l. facit 105 l. barter for A.

6

111 l.

If 111 l. be 100 l. what 62 d.  $\frac{4}{7}$  facit

56 pence the elle cost ready money.

Two Merchants barter, A hath Witche in barter at 42 pound the last, B hath Damaske at 56 pence the elle money, and at 62 pence  $\frac{4}{7}$  in barter, and he findeth that there is 6 per cento gotten in the 100 pound by his ware more then A getteth in his, what did a last cost ready money.

If 56 pence be 62 pence  $\frac{4}{7}$ , what 100 pound.

facit 111 l. the 100 l for B.

If 105 pound be 100 pound, what 42 pound.

facit 40 l. that a last cost ready money.

Two Merchants barter, A hath Witche at 40 pound the last ready money, B hath Damaske at 56 pence the elle money, in barter at 62 pence  $\frac{4}{7}$ , how deere must A rate a last of Witche at in barter, that he may gaine 6 per cento lesse then B.

A.

# The Pathvay to knowvledge.

If 56 pence, be 62 pence  $\frac{4}{7}$ , what 100 pound.  
facit 111 l. per cento for 13.

6

105

If 100 pound, be 105 l. what shall 40 l. be. facit 42 pound  
the last of Pitch, at that rate to gaine 6 pound leſſe then 13.

A and B barter, B hath Sugar at 7 pence the pound ready money, A hath 12 peeces of linnen at 21 pound the peece ready money, in barter for 23 pound the peece, and will haue of B the  $\frac{1}{2}$  part in money: more, he hath 2 clothes of 40 yards the peece, at 3 pound  $\frac{1}{2}$  the yarde ready money, in barter at 4 pound the yarde, and will haue of B  $\frac{1}{4}$  part thereof to be paide in money. The queſtion is, how deare B ſhall rate his Sugar in barter, that the barter may be alike, alſo how many pound of Sugar, and how much ready money, he muſt giue A for his linnen cloth and clothes.

If 1 peece 21 pound, what 12 peeces. facit 252 l. money.

If 1 peece 23 pound, what 12 peeces. facit 276 l.  $\frac{1}{4}$  . 46 l.  
in money.

252	276	280	320	80 money.
46	46	80	80	46 money.
<u>206 l.</u>	<u>230 l.</u>	<u>200 l.</u>	<u>240 l.</u>	<u>146 l.</u>

If 1 yarde 3 pound  $\frac{1}{2}$ , what 80. facit 280 l. money.

If 1 yarde 4 pound, what 80. facit 320 l. barter  $\frac{1}{4}$ .

206	230
200	240
<u>406 l.</u>	<u>470 l.</u>

If 406 l. be 470 l. what 7 pence. facit 8 d.  $\frac{1}{3}$ , the price of 1 pound of Sugar in barter. Then ſay, if 8 d.  $\frac{1}{3}$  be 1 l. what 470 l. be. facit 1160 l. of Sugar he muſt deliuer to A, & 126 l. in money for his linnen and clothe.

A and B barter, A hath 12 peeces of Linnen at 21 pound ready money, and will haue of B  $\frac{1}{2}$  part in ready money: more he hath 2 clothes of 40 yards the peece, at 3 l.  $\frac{1}{2}$ , ready money

Q y

the

## The Pathway to knowledge.

the yarde in barter, at 4 pound the yarde, and will haue  $\frac{1}{2}$  part in money, B hath 1160 pound of Sugar at 7 pence the pound money, and at 8 pence  $\frac{1}{2}$  in barter. The question is, at how high a price A hath rated his linnen at in barter.

If 1 yarde 3 pound  $\frac{1}{2}$ , what 80.

facit 280 l. money.

If 1 yarde 4 pound, what 80.  
ter  $\frac{1}{2}$  money.

facit 320 pound bar

If 1 pound of Sugar cost 7 pence, what 1160 pound.  
facit 406 pound.

If 1 pound of Sugar cost 8 pence  $\frac{1}{2}$ , what 1160 pound.  
facit 470 pound.

$$\begin{array}{r} 280 \text{ l.} \\ 80 \\ \hline 200 \text{ l.} \end{array}$$

$$\begin{array}{r} 320 \text{ l.} \\ 80 \\ \hline 240 \text{ l.} \end{array}$$

$$\begin{array}{r} 406 \text{ l.} \\ 200 \\ \hline 206 \text{ l.} \end{array}$$

$$\begin{array}{r} 470 \text{ l.} \\ 240 \\ \hline 230 \text{ l.} \end{array}$$

And seeing that A will haue  $\frac{1}{2}$  part in money, then there must be  $\frac{1}{2}$  parts of the goods he bartered, say then if  $\frac{1}{2}$  be 230 pound, what shall  $\frac{1}{2}$  be. facit 276 pound, and the 12 peeces of linnen being cast, one peece will be at 23 l. in barter.

A and B barter, A hath 12 peeces of linnen at 21 pound the peece money, in barter at 23 pound, and will haue  $\frac{1}{2}$  part money: he hath more 2 clothes of 40 yards the peece, at 3 pound  $\frac{1}{2}$  the yarde money, in barter at 4 pound: B hath Sugar at 7 pence the pound money in barter at 8 pence  $\frac{1}{2}$ . The question is, if A must haue money of B with the 2 clothes, and how much.

If 1 peece cost 21 pound, what shall 12 peeces cost.  
facit 252 pound.

If 1 peece 23 pound, what 12. facit 276 pound  $\frac{1}{2}$  parts,  
46 pound money.

If 1 yarde 3 pound  $\frac{1}{2}$ , what 80 yards. facit 280 pound.

If 1 yarde 4 pound, what 80. facit 320 pound.

$$\begin{array}{r} 252 \text{ l.} \\ 46 \\ \hline 206 \end{array}$$

$$\begin{array}{r} 276 \text{ l.} \\ 46 \\ \hline 230 \end{array}$$

$$\begin{array}{r} 206 \\ 280 \\ \hline 486 \end{array}$$

$$\begin{array}{r} 230 \\ 320 \\ \hline 550 \end{array}$$

# The Pathway to knowledge.

486 pound.

550 pound.

7 pence.

8 pence  $\frac{3}{4}$  part.

Multiply crosse wise, and subtract the productions, there remaineth 88 pound  $\frac{2}{3}$ , which denieth in the summes, as before are set downe, which is  $1\frac{2}{3}$ , it maketh 80 pound ready money, that he must haue with his clothes, which is  $\frac{1}{4}$  part of the 320 pound in barter, wherein no man is wronged.

A and B barter, A hath 12 peeces of Linnen at 21 pound the peece money, and will haue the  $\frac{1}{4}$  part in ready money of B, and for the rest Sugar, he hath more 2 peeces of clothe of 40 yardes the peece, at 3 pound  $\frac{1}{2}$  ready money the yarde, in barter at 4 pound the yarde, and will haue the  $\frac{1}{4}$  part in money, B hath Sugar at 7 pence the pound money, in barter at 8 pence  $\frac{3}{4}$ . The question is, how high a peece of linnen is rated in barter, also how much ready money and Sugar he must deliuer for the linnen, and clothes, that they may make euen betweene them.

If 1 peece cost 21 pound, what shall 12 peeces cost.

facit 252 pound.

If 1 peece cost 1  $\mathcal{L}$ , what shall 12 peeces cost.

facit 12  $\mathcal{L}$   $\frac{1}{2}$  (2  $\mathcal{L}$  money.

10  $\mathcal{L}$  . 240.

252 l.

2  $\mathcal{L}$ .

12  $\mathcal{L}$ .

200

2

452

2  $\mathcal{L}$ .

10  $\mathcal{L}$ .

If 1 yarde cost 3 pound  $\frac{1}{2}$ , what shall 80 yardes cost.

facit 280 pound.

If 1 yarde cost 4 pound, what shall 80 yardes cost.

facit 320 pound.

280

320  $\frac{1}{4}$  . 80 pound money.

80

80

200

240

40 ly

4 ay

## The Pathway to knowledge.

Say, if 452, 2  $\ell$ . be 10  $\ell$ . 240 pound, what shall 7 pence. facit 70  $\ell$  + 1680 pounds, that is like 8 pence  $\frac{1}{4}$ , and 70  $\ell$  1680, is 452 pound 2  $\ell$ , as 3662  $\frac{2}{3}$ , 16  $\frac{2}{3}$   $\ell$  pounds, or 2030  $\ell$ . + 48720, are like 106220 — 470.  $\ell$ , and 1  $\ell$  shall be like 23 l, so high is the linnen rated in barter, for that 1  $\ell$  is 23, so must 10  $\ell$  + 240 be 470 pound, the barter for A which he will have Sugar for. Then say, if 8 pence  $\frac{1}{2}$  be 1 l. what 470 pound, facit 1160 pound of Sugar, must be delivered to A with the 2  $\ell$  l. and 80 pound money, which is together 126 pound ready money, for his linnen and clothe.

Two barter, A hath 16 hundred of flaxe at 24 l. ready money, and he will have  $\frac{1}{4}$  part in money, and besides that, he desireth to have 12 pound per cento more gaine then B: the other hath Wainscot at 12 pound ready money the 100, and in barter at 15 l. The question is, how high A shall rate a hundred of his flaxe in barter.

24. 1  $\ell$ .  $\frac{1}{4}$ .  $\frac{1}{4}$   $\ell$  money. If 24  $\frac{1}{4}$   $\ell$ . —  $\frac{1}{4}$   $\ell$ . what 12 l. facit 8  $\ell$ . As 15 pounds or 8  $\ell$ , is like 360. 5  $\ell$ , and 1  $\ell$  is like 27 pound  $\frac{2}{3}$ , that A must rate his flaxe at in barter, that the barter may be like: but when A will have 12 per cento more then B: so say, if 100 l. 112 l. 27 l.  $\frac{2}{3}$ . facit 31 l.  $\frac{1}{4}$ . that A must rate his flaxe at in barter, that he may gaine 12 per cento more then B.

A and B barter, A hath 16 hundred of flaxe in barter at 31 pound  $\frac{1}{4}$ , and he hath  $\frac{1}{4}$  part in money paid him, and gaineth 12 per cento more then B, and B hath Wainscot at 12 l. the 100, money, in barter at 15 l. The question is, how much a hundred of flaxe cost ready money.

If 112 l. be 100 l. what 31 l.  $\frac{1}{4}$ . facit 27 l.  $\frac{2}{3}$ .

1  $\ell$ . 9  $\frac{1}{3}$  ready money. 27  $\frac{2}{3}$  (9  $\frac{1}{3}$  money.

9  $\frac{1}{3}$  2880

31  $\ell$ . 9  $\frac{1}{3}$  make 18  $\frac{2}{3}$ . what 12 l. facit 13  $\ell$ . 120.

As 13  $\ell$ . 120, is like 240, so is 15 and 1  $\ell$  like 24 pound that a hundred of flaxe cost ready money.

A and

## The Pathvway to knowvledge.

A and B barter, A hath flax at 24 pound the hundred ready money, and in barter at  $31\frac{1}{7}$ , and taketh the  $\frac{1}{7}$  in money, and yet gaineth 12 per cento more then B: the other hath Wainescot in barter at 15 l. the 100. The question is, what the 100 cost ready money.

If 112 be 100, what  $31\frac{1}{7}$ . facit  $27\frac{2}{7}$ .

24

27  $\frac{2}{7}$ .

$\frac{1}{7}$  is  $(9\frac{3}{7})$  ready money.

$9\frac{3}{7}$  in money.

9  $\frac{3}{7}$

14  $\frac{10}{7}$ .

18  $\frac{6}{7}$ .

facit 12 l. the hundred of Wainescot cost in ready money.

A and B barter, A hath flax at 24 l. the hundred money, in barter at  $31\frac{1}{7}$  parts, winning 12 per cento more then B, and B hath Wainescot at 12 l. the 100 ready money, in barter at 15 pound. The question is, what and how much he shall pay one vnto the other in ready money.

If 112 be 100, what  $31\frac{1}{7}$ . facit  $27\frac{2}{7}$  l. so should A rate his flaxe in barter, if he desired not to gaine 12 per cento more then B in his ware. Nowe as A setteth his ware in barter at  $27\frac{2}{7}$  parts. The question is, which of them both hath made the best bargaine.

Deuide each mans summe in barter, by his ready money, and he that hath the greatest production must giue money vnto the other, and hath the best bargain. The first hath such a production  $1\frac{2}{7}$ . The other is  $1\frac{1}{4}$ , but  $1\frac{1}{4}$  is more then  $1\frac{2}{7}$ , therefore B giueth ready money to A, and if you wil know much, do thus.

$$\begin{array}{rcl}
 24 & \times & 27\frac{2}{7} \text{ of A.} \\
 12 & \times & 15 \text{ of B.}
 \end{array}$$

Multiply crosse wise, and substract the productions, there resteth  $27\frac{2}{7}$ , which deuide by 3 the difference, and there will be  $9\frac{3}{7}$ , which are  $27\frac{2}{7}$  pound in barter, the third whereof B payde to A ready money for his ware.

## The Pathvay to knowvledge.

Two Merchants barter, A hath Wheate at 24 pound the tun money, in barter at 27 pound, to be delivered at 3 moneths, B hath Cheese at 5 pound the hundred, to be delivered at 6 moneths. The question is, what rate he shall sell his Cheese at in barter.

If 24 pound in 3 moneths, gaine 27 pound, what shall 5 pound in 6 moneths. facit 1 pound  $\frac{1}{4}$ . which 1 pound  $\frac{1}{4}$ , adde vnto 5 pound, it maketh 6 pound  $\frac{1}{4}$ , and so much must his Cheese be solde in barter.

A and B barter, B hath Cheese at 5 pound the hundred money, and in barter at 6 pound  $\frac{1}{4}$  at 6 moneths time, to be delivered, A hath Wheate in barter at 27 pound the tunne, to be delivered at 3 moneths. The question is, what the Wheate is worth ready money.

If 6 pound  $\frac{1}{4}$  in 6 moneths, be but 5 pound, what shall 27 pound be. facit 24 pound that the Wheate was worth ready money.

A and B barter, A hath Wheate at 24 pound the tun ready money, in barter at 27 pound the tun, to be delivered at 3 moneths, B hath Cheese at 5 pound the hundred ready money, in barter at 6 pence  $\frac{1}{4}$ . The question is, what time B had to deliver his ware.

If 24 pound 1  $\ell$ , what 5  $\ell$ . facit  $\frac{1}{4}$   $\ell$ . and 1  $\ell$  is like 6 moneths, so much time had he to deliver his ware.

A and B barter, B setteth his ware 1  $\frac{1}{2}$  higher in barter then he giueth it ready money, and will deliver it in 6 moneths, A esteemeth his ware in ready money 24 pound, and in barter 27 pound at 3 moneths. The question is, what B esteemeth his ware ready money.

1  $\ell$   
6 mon.

1  $\frac{1}{2}$

24  
3 moneths.

If

## The Pathway to knowledge.

If 1<sup>2</sup>℥. 1  $\frac{1}{2}$ . what is 12. facit  $1\frac{1}{2}$ ℥. like as 3 and 1<sup>2</sup>℥ are 5 moneths, that he must deliver his ware in.

A. and B. barter, A. hath Vine at 16 pence the hundred ready money, in barter at 20 pence the hundred, to be delivered at 4 moneths, and will have  $\frac{1}{2}$  in money, B. hath Saffron in barter 10 pence  $\frac{1}{2}$  the pound, at 6 moneths, to be delivered the question is, how much the Saffron is worth ready money

16	20 $\frac{1}{2}$ . 5 l. ready money.
5	5
<hr/> 11	<hr/> 15
	14
	<hr/> 4 pence.

If 4 moneths give 4 pence, what 6 moneths. facit 6 pence which added to the 11 pence, maketh 17 pence, which is 17 pence for 11 pence, what shall 10 pence  $\frac{1}{2}$ . facit 1 pound that the Saffron is ready money.

A. and B. barter, A. hath Vine at 16 pence the hundred ready money, in barter at 20 pence, and will have  $\frac{1}{2}$  in money, to deliver the ware at 6 moneths. B. hath Saffron at 7 l. the pence ready money, to be delivered at 6 moneths. The question is, how dare his Saffron shall be sold in barter, that he may gain 12 l. per cent. more then A. Make your account as in the former question, how high the Saffron is made in barter: then say.

If 100 pence, 112 pence, what 10  $\frac{1}{2}$  parts.  
facit 12 pence  $\frac{11}{17}$  parts.

A. and B. barter, A. hath 6 pieces of Linnen cloth, at 12 l. the piece ready money, in barter at 16 pence at 4 moneths time to be delivered, and will have  $\frac{1}{2}$  in money: he hath more 4 pieces of Kersey, at 32 pence the piece ready money. in barter at 26 pence at 6 moneths and will have  $\frac{1}{2}$  part in ready money, B. hath Spice at 16 pence the hundred ready money. The question is, what he shall rate it at in barter, at 8 moneths

# The Pathvay to knowvledge.

time of delivary, also what spice and ready money he must deliver unto A.

If 1 pice be 12 pound, what 6 pice. facit 72 l.

If 1 pice be 16 pound, what 6 pice. facit 96 l.

72	96 $\frac{1}{2}$ (24 l. money.
24	24
<hr/> 48	<hr/> 72

If 72 l. 4 mon. 288.

120	6	720
<hr/> 192		<hr/> 1008

(4

55

1008 (5  $\frac{1}{2}$  moneths.

192

1 lb. 32 l. what 4 lb. facit 128 l.

1 lb. 36 l. what 4 lb. facit 144 l.

128 l.	144 $\frac{1}{2}$ money, 24 l.
24	24
<hr/> 104 l.	<hr/> 120

48	72
<hr/> 152	<hr/> 192
	<hr/> 152
	40 gaine.

152 l.

16 l.

40

5 mon.  $\frac{1}{2}$ .

8 mon.

If 798. 40. 128. facit 6 l.  $\frac{1}{3}$  for B. which adde to 16 l. it maketh 22 l.  $\frac{1}{3}$ , so deare shall B rate the 100 pound of spice in barter, then adde 24 pound ready money for the linnen cloathe, and 24 pound money for the kerseys, it maketh 48 l. that B. must pay A. in money. Now to know how much spice B must deliver to A: say if 22 l.  $\frac{1}{3}$  be 100 l. what 192 pound. facit 856 l.  $\frac{2}{3}$  of spice that B must deliver to A. with the 48 l. of money.

## The rule of Alegation.

A Merchant hath 4 sorts of Rie, at 28 l. 29 l. 32 l. and 36 l. the tun, and of these 4 sorts he will sell 20 tun, at 30 pound the

# The Pathvway to knowvledge.

the tun one with the other, the question is, how much of each  
sozt he must deliuer.

$$\begin{array}{r|l}
 30 \text{ l. } \left\{ \begin{array}{l} 28 \\ 29 \\ 32 \\ 36 \end{array} \right. & \begin{array}{l} 2 \\ 1 \\ 2 \\ 6 \end{array} \\
 \hline
 & 11
 \end{array}$$

If 11 be 20 tun, what  $\left\{ \begin{array}{l} 2 \\ 1 \\ 3 \\ 6 \end{array} \right.$  facit  $3 \frac{7}{11}$  of 28 l. the tun.  
facit  $1 \frac{9}{11}$  of 29 l. the tun.  
facit  $3 \frac{7}{11}$  of 32 l. the tun.  
facit  $10 \frac{1}{11}$  of 36 l. the tun.

A Merchant hath 2 sortes of wine of 4 d. the quarte, & of 6 d.  
the quarte, of these 2 sorts he will sell a vessell of 128 quartes,  
which shall cost him no more then 47 s. 3 d. The question is  
how many quartes of each sorte he must take to fill the vessell.

Say,

If 128 quartes be worth 47 s. 3 d. what 1 quarte.

facit  $4 d. \frac{3}{4}$ .

If 2 d. be 128 quartes what  $\left\{ \begin{array}{l} 1 \frac{1}{2} \\ \frac{2}{3} \end{array} \right.$  facit 96 quartes, of 4 d.  
 $\frac{2}{3}$  facit 32 quartes of 6 d.

$$\begin{array}{r|l}
 4 d. \frac{3}{4} \left\{ \begin{array}{l} 4 \\ 6 \end{array} \right. & \begin{array}{l} \frac{3}{4} \\ 1 \frac{1}{2} \end{array} \\
 \hline
 & 2 d.
 \end{array}$$

If a quarte of wine cost 5 d. how much water must be  
mingled with 128 quartes of wine, that the quart may be sold  
for  $4 d. \frac{3}{4}$ .

Say if  $4 d. \frac{3}{4}$  be  $\frac{3}{4}$  lesse what 128 quartes, facit 14 quartes  $\frac{3}{4}$  of  
water that he must put into the wine to sell it for  $4 d. \frac{3}{4}$ .

A merchant hath 128 quartes wine, wherewith he ming-  
leth  $14 \frac{3}{4}$  quartes water, and he findeth that it being so mingled  
the quart is worth  $4 d. \frac{3}{4}$ . The question is what a quart of wine  
cost at the first.

## The Pathway to knowledge:

$$\begin{array}{r} 128 \\ 14 \frac{1}{2} \\ \hline 142 \frac{1}{2} \end{array}$$

If 1 quart be 4 pence  $\frac{1}{2}$ , what 142 quarts  $\frac{1}{2}$ . facit 640 pence, so much the whole 128 quarts mingled amount unto. which is 5 pence a quart as it cost at the first. To prove it, say: if 128 quarts, cost 640 L. what 1 quart. facit 5 pence.

A Merchant hath a peece of Wine of 128 Gallons, out of the which he draweth 16 Gallons, and filleth it up againe with water: againe, he draweth 16 Gallons, and filleth it againe with water: the third time he doth the like, and fillet it with water: as also the fourth time and filleth it with water. The question is, how much Wine and water remained in the peece of Wine.

$$\begin{array}{r} 40 \\ 2288 \\ 26 \text{ I subtrad.} \\ \hline 7 \text{ res.} \end{array}$$

$$\begin{array}{r} 8 \\ 8 \\ \hline 64 \\ 64 \\ 256 \\ 3840 \\ \hline 4096 \end{array}$$

$$\begin{array}{r} 7 \\ 7 \\ \hline 49 \\ 49 \\ 441 \\ 196 \\ \hline 2001 \end{array}$$

Then say, if 4096, be 2401, what 128 quartes. facit 75 quarts  $\frac{1}{5}$  Wine, that resteth in the peece of Wine.

A Merchant hath a peece of 128 Gallons of Wine, out of the which he draweth certaine Gallons, and he filleth it againe with water: the second time he draweth out as much as he did at the first, and filleth it againe with water: the like he doth the third and fourth time, and in the end he findeth that there is 75 Gallons  $\frac{1}{5}$  of Wine in the peece, besides the water that was put into it: the question is, how many Gallons he drew at a time out of the same peece of Wine. To do this, you must finde 3 equall proportions betwene 128 Gallons, and 75 Gallons  $\frac{1}{5}$ , which to finde out do as followeth.

4096 . 2401 . which are the proportions of 128, and 75  $\frac{1}{5}$  multiply each cōfike both.

# The Pathway to knowledge.

A	D	C	E	B
4096	3584	3136	2744	2401

Multiply 4096 by 2401. facit 9834496. whereof  $\sqrt{\phantom{x}}$  is 3136 for the middle proportion, betwene A and B, which is C. Then multiply 4096 with 3136, which are marked A. C. it maketh 12845056. whereof  $\sqrt{\phantom{x}}$  is 3584. for the middle proportion, betwene A and C, and is marked D. then multiple C which is 3136 with B, which is 2401 facit: 7529536. whereof  $\sqrt{\phantom{x}}$  is 2744, for the middle proportion betwene C and B, which is marked with E. Now for that 4096 standeth first, and 2401 standeth last, in the places of the Wine that should remaine, and 3584 in the place of the Wine that remained in the peece at the first time when it was drawne: therfore subtract 3584 out of 4096 there resteth 512, the difference of the first drawing, which deuide by 32 (because the partes are deuided into 32) and it is 16 Gallons drawne out each time. Now if you will know how much Wine was euery time drawne forth without water, then marke that the first time there was 16 Gallons drawne: the second time 16 Gallons, whereof there was but 14 Gallons cleare wine, and 2 Gallons of water, for that the wine remaining in the tun, waiteth proportionally, so should the water doe likewise, so there were no more water put in, and so the proportion vnlike: therfore take the proportion of C which is 3136 out of the proportion of D, which is 3584, there resteth 448, which deuide by 32, it maketh 14 Gallons of Wine, then take the proportion of E. out of the proportion of C, there resteth  $3\frac{2}{3}$  or 12 Gallons  $\frac{2}{3}$  of Wine, the rest being  $3\frac{1}{4}$  Gallons is water. Then take B out of E, there shall rest  $4\frac{3}{4}$  or 10 Gallons  $\frac{3}{4}$  of Wine, the rest being  $5\frac{1}{4}$  Gallons is water, so now there remaineth at last  $4\frac{2}{3}$  or 75  $\frac{1}{3}$  Gallons of Wine in the peece. Now adde all the Wine that is drawne out, as 16, 14, 12  $\frac{2}{3}$ , 10  $\frac{3}{4}$  Gallons to the Wine remaining, that is to 75  $\frac{1}{3}$  Gallons, they make 128 Gallons, as much as was in the peece before.

A Merchant hath 128 gallons of Wine, in a Peece or a  
 Hoghead at 5 pence the gallon, out of the which he draweth 16  
3
gallons,

## The Pathvay to knowvledge.

gallons, and filleth it vp with water, then he draweth 16 gallons more, and filleth it againe with water, the question is what a gallon so mingled with water will cost. Take 16 out of 128, there resteth 112, which multiplie in it selfe, it is 12544, then multiply 128 in it selfe, it is 16384, then say, if 16384 be 5 p. what are 12544, facit 3 d.  $\frac{1}{2}$  parts: so much a galllon shall cost of the Wine remaining in the Fat or Péece.

A Merchant hath a Péece of Wine, at 5 d. the quarte, out of the which he draweth 16 quartes, and filleth it with water againe, after that, he draweth 16 quartes more, and filleth it againe with water, and casting his accompt, he findeth that the Wine in the Péece being so mingled, standeth him in 3 d.  $\frac{1}{2}$  parts, the question is how many quarts there is in the Péece: take the middle proportion betwene 5 d. and 3 d.  $\frac{1}{2}$ , after the manner of working before shewed, it maketh 4 d.  $\frac{2}{3}$ , which subtract from 5, resteth  $\frac{1}{3}$ , the difference when as 16 quarts were drawn out, therefore say, if  $\frac{1}{3}$  giue 16 quarts, what shall 5 d. giue, facit 128 quartes, so many did the vessell hold, or say  $\frac{1}{3}$  giue 16, what shall  $\frac{1}{2}$ , the second difference, it maketh 14 quartes, that was drawne the second time, which subtract out of 16, resteth 2, and say, if 2 giue 16, what shall 16 giue, facit 128 quartes, for the quantitie of the Fat.

A merchant hath one Péece of wine of 128 pottles, at 5 d. the pottle, of the which he draweth 16 pottles, and he filleth it againe with other wine, at 4 d. the pottle. after that he draweth out 16 pottles more, and filleth it againe, with the same sort of wine, of 4 d. the pottle, the like doth he also the 3 time, the question is how much the pottle of mingled wine shall cost, which yet is in the vessell, take 16 pottles which was drawne out from 128 pottles there resteth 112 pottles, and say.

If 128 make 112, what shall 16 make. facit, 14 pottles at 5 d. the pottle, was there drawne out the 2 time, which take out of 112 there resteth 98, then say if 128 be but 98, what shall 16 be, facit 12  $\frac{1}{2}$  pottles, at 5 d. the pottle, which was drawne out the 3 time, which take out of 98 resteth 85  $\frac{1}{2}$  at 5 d. the pottle, which taken out of 128 resteth 42  $\frac{1}{2}$  pottles at 4 d. the pottle,

## The Pathvay to knowledge.

Pottle, then say if 1 pottle cost 5 d. what shall 85  $\frac{1}{4}$  cost.  
 facit 428 d.  $\frac{1}{4}$  d.

Say againe, if 1 cost 4 d. what shall 42  $\frac{1}{4}$  cost, facit 169 d.  
 all is 597 d.  $\frac{1}{4}$  which maketh 4 d.  $\frac{1}{4}$  partes for a pottle of mingled wine.

A Goldsmith hath an ingot of siluer, from the which he cutteth off a marke of siluer, and in place thereof he melteth with it againe a marke of copper, and hauing molten and mingled it together, he taketh off another marke of siluer, and to the rest melteth another marke of copper, which hauing done, he cutteth off another marke of siluer, and putteth to the same another marke of copper, and findeth after ward by the said, that the mingled Ingot holdeth 8  $\frac{1}{4}$  penny waight fine, the question is how many markes the Ingot wayed. facit.

Seeke two middle proportions betweene 12 penny waight, (for so much a marke fine siluer holdeth) and 8 d.  $\frac{1}{4}$  fine, set 12 and 8  $\frac{1}{4}$  each vnder a nominator, they make 1536. and 1029, multiply the first number as 1536 in it selfe, quadrant wise, it is 2359296, which multiply by 1029 it will be 2427715584 out of the which extract  $\sqrt{\quad}$  it is 1344, for one middle proportion, now to finde the other, by the rule of three: say.

If 1536 giue 1344, what shall 1344 giue.

facit 1176 for the other middle proportion.

Or multiply 1344 by 1029 and out of that you may take the  $\sqrt{\quad}$  it will likewise make 1176, as before, now subtract 1344 out of 1536 there resteth yet 192, for the difference when one marke siluer was first cut off, then say.

If 192 giue 1 marke, what shall 1536 giue.

facit 8 markes, and so much the pece waighed.

1536. 1344. 1176. 1029.

A Goldsmith hath 8 markes of fine siluer, out of the which he cutteth a marke, and in place thereof, putteth a marke of copper, then hauing mingled it, he cutteth off againe 1 marke of siluer, and putteth thereto againe 1 marke of copper, the like doth

## The Pathvay to knowledge.

Both he also the third time, the question how much a marke as it is mingled will holde, facit 8 markes  $\frac{1}{2}$  fine. worke it us.

Take 1 marke from 8 markes, there resteth 7 markes, which multiply in it selfe, cubike wise, it maketh 343, then multiply 8 in it selfe Cubike wise, it maketh 512, then say, if 512 give 343, what shall 12 penny waight give, (for so much a marke fine silver is) facit 8 markes  $\frac{1}{2}$  fine, otherwise, I make fine silver, is 12 penny waight, what then is 8 penny waight facit 69 penny waight fine, out of this is taken 1 marke fine silver, there resteth yet 84 penny waight fine, then againe is put in 1 marke copper, therefore the 8 markes be 84 penny waight fine. and then 1 marke must be 10 penny waight  $\frac{1}{2}$  fine which 10  $\frac{1}{2}$  fine, take out of 84 penny waight fine, there resteth yet 73  $\frac{1}{2}$ , which deuide againe into 8 markes, maketh 9  $\frac{1}{2}$  penny waight fine, for 1 marke, after that the second marke of copper is put to it, then take 9  $\frac{1}{2}$  penny waight fine, out of 73  $\frac{1}{2}$  penny waight fine, resteth 64  $\frac{1}{2}$  penny waight fine, which deuide in 8 markes, maketh 8  $\frac{1}{2}$  penny waight fine, for the marke, after that it hath bin mingled the 3 time with copper.

## The rule of false positions.

**T**his rule is called the rule of false positions, not because it is false of it self, but because that by 2 false numbers which are prepounded, the true same is found out, in such manner, take a number at your pleasure, and proceede in working therewith, as if it were the right number, and if by the same working, there cometh out more then should be, then marke it with the signe of the +, which signifieth more, and if there be lesse then should be, marke it with the signe — which signifieth lesse and if you so find 2 ++ or 2 — — then subtract the one from the other, but if it be 1 + and 1 — then you must adde them together, and the production shall be your deuisor: then multiply the opposed numbers, with the false productions, crossewise, and if they be ++ or — — then subtract the one out of the other, but if they be + and — then adde them together, and deuide the production by the deuisor, and the quotient of that deuisor shall be the true number you desire.

## The Pathvay to knowvledge.

A yong man is in a garden and findeth certaine yong maides there, saith, god saue you all 12 faire maides, wherunto, one of the answered we are not 12 but if we were 4 times so many more as we are, the we should be as many more then 12 as we are lesse then 12: the question is how many maides they were.

Say that there were 8, then 4 times so many more makes 40, which should be (as many ouer 12, as the supposition is vnder 12,) 16 which is 24 to many, therfore say that there were 6, and worke as you did with the 8, there will be 12 more, worke after the rule it will be 4 maides that were in the garden.

$$\begin{array}{r} 144. \\ 96. \\ \hline 48. \end{array}$$

$$\begin{array}{r} 8 + 24. \\ 6 - 12. \end{array} \quad \text{12. deuifoz.}$$

48 (4 maides.  
x2

A Merchant is inbebted 800 pound, to pay at 4 moneths, and when one moneth is past he payeth 200 pound, and 1 moneth after the first month he payeth 300 pound, at what time shall he pay the rest. Say he vseth the 800 pound one meneth, then he payeth 200 pounds, there resteth yet 600 pound, which he vseth yet 1 month, then payeth 300 pound, then he is yet to pay 300 pound, which I say he vseth after the 2 payments two months, now, multiply each summe of money by his time, and adde the three productions together they make 2300, which should be 3200, (which commeth of 800 pound: multiplied by 4 months,) — 900 pound, say then that he vseth the last 300 l. 4 moneths and worke forward, it will be 2900. — 300 pounds worke according vnto the rule it will be 5 moneths, at that time shall he pay the rest after the last payment of 300 pound.

$$\begin{array}{r} 36. \\ 6. \\ \hline 20. \end{array}$$

20. (5 months.  
6.

$$\begin{array}{r} 2 - 900. \\ 4 - 300. \\ \hline 6. \end{array}$$

6 deuifoz.

## The Pathway to knowledge:

For more: multiply 800 pound by 1 month, 600 l. by 1 month  $\frac{1}{2}$  and 300 pound by 5 months, and add the 3 productions together, they make 3200 l. which divide by 800 l. it will make 4 months, one payment with the other.

Otherwise: say the money gaineth 12 per cento in the yeare, and say, if 100 pound in 12 months gain 12 pound, what shall 800 l. in 4 months, facit 32. Now see how much 800 l. shall gain 1 month. If 100 l. in 12 months gain 12 l. what shall 800 l. in 1 month, facit 8 l. Then say, if 100 in 12 months gain 12 l. what shall 300 l. in 5 months, facit 15 pound, the which 3 productions are together 32 pound, which 800 pound gained in 4 months.

A Merchant delivered 300 l. at interest for 12 per cento in the yeare, and the interest of his money amounteth unto at the end of the 20 day of Aprill anno 1583, the summe of 9 pound, 17 shillings 4 pence  $\frac{1}{2}$ . The question is, upon what day the money was delivered, accounting 365 daies to a yeare, it maketh the 10 day of January, anno 1583.

Say he delivered the money the 15 day of Februarie that is to the 20 of Aprill in that yeare 1583, 64 daies: say then. If 365 daies gain 12 pound, what shall 64 gain, facit 2 pound, 2 shillings 1 penny  $\frac{1}{2}$ . Say againe, if 100 pound gain 2 l. 2 s. 1 d.  $\frac{1}{2}$ , what shall 300 pound gain, facit 6 l. 6 s. 3 d.  $\frac{1}{2}$ , and it shal be 9 l. 17 s. 4 d. and  $\frac{1}{2}$ , therefore it is — 3 l. 11 s. 0 d.  $\frac{1}{2}$ , or 3 l.  $\frac{1}{2}$ , therefore let be lent the money upon the 31 day of January, which is to the 20 of Aprill 83, 79 daies, and say: if 365 daies gain 12 pound, what shall 79 gain, facit 2 l. 12 s. 3 d.  $\frac{1}{2}$ . Then say, if 100 pound gain 2 pound, 12 shillings 3 d.  $\frac{1}{2}$ , what shall 300 pound gain, facit 7 pound 16 shillings 1 penny  $\frac{1}{2}$ , and it shal be 9 pound, 17 shillings 4 pence  $\frac{1}{2}$ . It is therefore 2 pound, 1 shillings 6 pence,  $\frac{1}{2}$ , or 2  $\frac{20}{365}$  to —.

$$64 - 3 \frac{20}{365}$$

$$79 - 2 \frac{26}{365}$$

540 denier. It maketh that the money was at interest 100 daies, from the 10 of January, unto the 20 of Aprill 1583.

A man

## The Pathvay to knowledge.

A man hath hired a labourer for 40 daies, in such sort, that when he worketh he shall have 3 pence the day, and when he playeth he shall be rebated 5 pence the day: Now when the 40 daies were ended, they finde that neither of them could aske one of the other. The question is, how many daies he wrought, and how many daies he plaide. Set he wrought 20 daies, then he paid 20 daies, call then what he yeained, it cometh to 60 pence, and what he spent it cometh to 100 pence, then he should be indebted 40 pence, which is too little. Say then he wrought 30 daies, then he must play 10 daies: worke as the rule prescribeth, it is too much 40 pence.

$$20 - 40 \quad 80 \text{ denisoz.}$$

$$30 + 40$$

$$80 \text{ is } \frac{1}{2} \text{ is } 25$$

Note that when the one false position is as great as the other, and that the one is + the other —, then so onely adde both the suppositions together, and out of the proportion take  $\frac{1}{2}$ , as adde 20 and 30 together, it is 50, wherof so many daies did he worke, and 15 daies he plaide.

A Merchant buyeth cloth, and if he take 12 clothes he wanteth 42 pound to pay, and if he take but 9 clothes, then he hath 84 pound too much money: the question is, how much money he hath, how much a cloth cost, and how many clothes he bought.

Say he bought one clothe for 36 pound, then the 12 clothes must be 432 pound, then he wanteth 42 pound, then there remaineth 390 pound, that he must have had: then say, if one clothe cost 36 pound, what shall 9 clothes cost, facit 324 pound, then he should have 84 pound over, therefore he had 408 pound, which should be 390 pound, there it is too much 18 pound, then say he bought the clothe for 40 pound, and worke as the rule teaches you, it maketh 6 too much.

$$36 + 18$$

$$40 + 6$$

$$12 \text{ the denisoz.}$$

## The Pathway to knowvledge.

It maketh that 1 clothe cost 42 pound: then to know how much money he had, say. If 1 cloth cost 42 pound, what shall 12 cost, facit 504 pound, out of the which take 42 pound that he wanted, resteth 462 pound, so much money he had. Now to know how many clothes he bought, if 42 pound buie one cloth, what shall 462 pound. facit 11 clothes.

A pongman hath gathered certaine Apples in a garden, hauing them he met with thre maids which desired to haue some of his Apples, whereof he giueth the first maide  $\frac{1}{4}$  part of all his Apples, and she giueth him thre Apples againe, to the second maide he giueth  $\frac{1}{3}$  part of his Apples remaining, and she giueth him 2 againe: to the third maide he giueth the  $\frac{1}{2}$  part of the rest of his Apples left, and she giueth him 1 againe, and at the last he had 13 Apples left. The question is, how many Apples he had at the first: Say he had 16 Apples.

$$16 \frac{1}{4} \text{ is } 4.$$

$$\underline{4}$$

$$12 \text{ rest.}$$

$$3 \text{ giue againe.}$$

$$15. \text{ the he had } 15.$$

$$15 \frac{1}{5} \text{ is } 5.$$

$$\underline{5}$$

$$10 \text{ rest.}$$

$$2 \text{ giuen againe.}$$

$$12 \text{ rest } 12.$$

$$12 \frac{1}{2} \text{ is } 1 \frac{1}{2}.$$

$$\underline{1 \frac{1}{2}}.$$

$$10 \frac{1}{2} \text{ rest.}$$

$$1 \text{ giuen againe.}$$

$$11 \frac{1}{2} \text{ rest } 11 \frac{1}{2}.$$

rest  $11 \frac{1}{2}$  and he should haue had 13, it is then  $1 \frac{1}{2}$  to —.

$$24 \frac{1}{4} \text{ is } 6.$$

$$\underline{6}$$

$$18 \text{ rest.}$$

$$3 \text{ giuen againe.}$$

$$21 \text{ rest } 21.$$

$$21 \frac{1}{7} \text{ is } 7.$$

$$\underline{7}$$

$$14 \text{ rest}$$

$$2 \text{ giuen.}$$

$$16 \text{ rest } 16.$$

$$16 \frac{1}{7} \text{ is } 2 \frac{2}{7}.$$

$$\underline{2 \frac{2}{7}}$$

$$13 \frac{5}{7}$$

$$1 \text{ giuen.}$$

$$14 \frac{5}{7} \text{ rest.}$$

$$16 - 1 \frac{1}{2}$$

$$24 + 1 \frac{1}{2}$$

$$\underline{40}$$

facit 20 apples  
he had.

And it should be but 13, it is then  $1 \frac{1}{2}$  to +.

A man maketh his will, and willeth that each childe shall haue a like of his goods: now to the first childe was giuen 100 l. and  $\frac{1}{4}$  part of the rest that should remaine: to the second was giuen 200 pound, and  $\frac{1}{2}$  part of the money remaining: the third childe

## The Pathway to knowledge.

childe had 300 pound, and  $\frac{1}{4}$  part of the money remaining, and so to every childe 100 l. and  $\frac{1}{4}$  part of the money remaining, and so the fathers will was performed. The question is, how much money the father left behinde him, and also how many children they were, and how much each of them had to his part. Say the money was in all 2500 pound, and worke according to the question.

$\begin{array}{r} 2500 - 100 \\ \hline 2500 \frac{1}{4} \text{ is } 300 \\ 400 \\ \hline \text{rests } 2100 \text{ l. } 400 \text{ for} \\ \text{the first childe.} \end{array}$	$\begin{array}{r} 2100 \text{ l. for all the rest.} \\ 200 \\ \hline 1900 \text{ rest } \frac{1}{4} \text{ is} \\ 237 \frac{1}{4} \\ \hline 1662 \frac{1}{4} \text{ rests.} \end{array}$	$\begin{array}{r} 237 \frac{1}{4} \\ 200 \\ \hline 437 \frac{1}{4} \end{array}$
--	--	---

That is 437 l.  $\frac{1}{4}$  for the second childe, but his money must be like the first, that is but 400 l. it is therefore + 37 l.  $\frac{1}{4}$ .

Say the money was 3300 pound.

$\begin{array}{r} 3300 \quad 100 \\ 3200 \frac{1}{4} \text{ is } 400 \\ 500 \quad 500 \\ \hline 2800 \text{ rest.} \\ \hline 500 \text{ l. for the first childe.} \end{array}$	$\begin{array}{r} 2800 \\ 200 \\ \hline 2600 \frac{1}{4} \text{ is } 325 \text{ l.} \\ 200 \\ \hline 525 \text{ for the second childe} \\ \text{his part.} \end{array}$	
--	---	--

It is 525 l. for the second childe, and it should be but 500 pound as much as the first, therefore it is 25 pound to + .

$$\begin{array}{r} 2500 + 37 \frac{1}{4} \mid 75 \mid 3 \\ 3300 + 25 \mid 50 \mid 1 \end{array} \quad \begin{array}{l} \text{I the deuifor.} \end{array}$$

facit 4900 l. the summe of all the money that he had to deuide, that is 700 l. for the first childe, so much must each of them haue: then say by the rule of thre.  
If 700 pound be 1 childes part, what shall 4900 be.  
facit 7 childrens parts.

## The Pathway to knowledge.

Eight yarden of red velvet, and 6 yarden of greene velvet, cost together 64 pound, and at the same price a 11 yarden of red velvet, and 9 yarden of greene velvet cost 91 pound: The question is what 1 ell red velvet, and 1 ell greene velvet cost aparte.

Say the yarde of red velvet cost 6 pound, which multipli'd by 8 yarden, is 48 pound, that subtracted from 64 pound, resteth 16 pound, for 6 yarden of greene velvet, then 1 yarde of greene velvet must cost 2 pound  $\frac{2}{3}$  parts, then say 11 yarden of red velvet cost 66 pound, what shall 11 yarden cost.

facit 66 pound.

Say againe, if 1 yarde of greene velvet cost 2 pound  $\frac{2}{3}$  what shall 9 yarden cost. facit 24 pound, which added to 66 pound, it is 90 pound, which should be 91 pound, it is therefore 1 pound to — say then that 1 yarde of red velvet cost 7 pound, & worke as you are taught, it will be — 2 pound.

If 1 yarde of red velvet cost 5 pound, what shall 8 yarden cost.  
facit 40 pound.

If 1 yarde greene velvet cost 4 pound, what shall 6 cost,  
facit 24 pound. 64 is, your demand.

12

7

5 (51.

6 — 11.

7 — 21.

1 denier

A saith to B. give me 4 pound, then haue I as much as you, to whome B. said, give me 4 pound then I haue 9 times as much as you haue: The question is, how much each of them had in money.

Say A. hath 8 pound, then he had 16 pound, for if B. had 4 pound from B. then each man hath 12 pound. but if B. receiue 4 pound of A. then B. hath 20 pound, and A. hath 4 pound, but B. must haue 9 times as much as A. (which should be 36 pound) it is then 16 pound, to — Say then A. hath 7 pound, then B. must haue 15 pound, worke as the rule leads, it will be 8 pound

12

## The Pathway to knowledge.

to — and according to the rule it is 6 pound, for A. and 14 pound for B.

A Goldsmith hath 2 Silver cups with one cover, which weigheth 33 ounces, now if the cover be set upon the first cup, then it is 3 times heavier then the other cup, but if the cover be laid upon the other cup, then it is 4 times heavier then the first: The question is how much each cup weighed by it selfe, facit, the first 12 ounces, the other 15 ounces. Say the first weighed 15 ounces, whereunto adde 33 ounces, they make together 48 ounces, which divide in three, it maketh 16 ounces, (and that is 4 times as much as the first cup) it is therefore 11 ounces to — Say then the first was 9 ounces, and worke according to your question, it will be + 11 ounces, then worke as the rule requireth, it is as before, 11 ounces the first, and 15 ounces the second cup.

There are 2 Townes one distant from the other 200 miles, from the which 2 Townes, there are 2 Postes that departe upon one day, from the one Towne unto the other, and the one Poste goeth daily 3 miles more then the other, and they meete together in 12 dayes: The question is how many miles each Poste hath gone every day.

Say the first goeth 6 miles a day, then the other Poste went 9 miles a day, which multiply by 12 dayes it is 72 miles, and 108 miles, which together make 180 miles, and should be 200 miles, it is to — 20 miles.

Say then, the first went 7 miles a day, then the second must goe 10 miles, worke according to your question, it is + 4 miles.

(— 20

7 + 4

24 the denier.

facit 6  $\frac{1}{2}$  of a mile the first went, then the second went 9 miles, and  $\frac{1}{2}$  partes of a mile each day.

The

## The Pathvay to knowledge.

Three men haue bought a Shippe for 200 hundred pound, A. will haue of B.  $\frac{1}{2}$  and then he will pay for the Shippe, B. will haue of C.  $\frac{1}{4}$  parte and he will pay for the Shippe, C. will haue of A.  $\frac{1}{4}$  part of his money, then he will pay for the Shippe: The question is how much money each man had.

Say A. had 108 pound, then B. must haue 184 pound, for A. wanteth 92 pound, which the haulfe of B. money maketh, now B. wanteth 16 pound of money to pay for the Shippe, which must be  $\frac{1}{4}$  parte of C. money, then C. had 64 pound, whereunto adde  $\frac{1}{4}$  parte of A money, which is 36 pound, then it is 100 pound, which should be 200 pound, it is therefore 100 pounds to — say then that A. had 114 pound, then B. must haue 172 pound, and C. 112 pound, being wrought it will make altogether 50 pound to —.

A.	B.	C.					
108	184	64	—	10	0	2	1 the denisor.
114	172	112	—	5	0	1	
facit 120 pound for A. 160 pound for C.							

Three marchants haue bought a house for 1200 pound, whereof A. desireth of B. and C.  $\frac{1}{2}$  parts of their money, then he will pay for the house, B. will haue of A. and C. the  $\frac{1}{4}$  part of their money, then will he pay for the house, C. will haue of A. and B. the  $\frac{1}{4}$  part of their money, then he will pay for the house: The question is how much money each man had.

Say A. had 300 pound, then he wanted 900 pound, therefore 900 pound is the  $\frac{1}{2}$  parte of B. and C. money, then they 2 together must haue had 2700 pound, whereof say B. had 900 pound, and C. 1800 pound, now B. will haue of A. and C. the  $\frac{1}{4}$  part of their money, therefore adde 1800 pound, and 300 they make 2100 pound, whereof the  $\frac{1}{4}$  part is 525 pound, which adde to 900 pound of B. money, then he hath 1425 pound, to pay for the house, and it should be but 1200 pound, so it is 225 pound, to + then say that B. had of the 2700 pound, 700 l. and C. 2000, proceed as the rule leadeth, it will be 75 pound, +

$$\left. \begin{array}{l} 900 + 125 = 3 \\ 700 + 75 = 1 \end{array} \right\} 2 \text{ the denisor.}$$

wozke

## The Pathway to knowledge.

Woꝛke according to the rule, is 600 pound for B, and 2100 l. for C, whereunto adde  $\frac{1}{2}$  part of A. money and B, which is 128  $\frac{1}{2}$ , it is 2228 pound  $\frac{1}{2}$  and should be but 1200 pound, it is + 1028  $\frac{1}{2}$ .

Say then that A had 400 pound, there wanteth then 800 l. then 800 pound is the  $\frac{1}{2}$  part of B. and C. money, then B. and C. together must haue had 2400 pound, wherof say B had 900 pound, and C. 1500 pound: adde A. and C. money together, they make 1900 pound, whereof the  $\frac{1}{2}$  part is 475 pound, which adde to 900 pound of B. money, then it is 1375 pound, should be but 1200 pound, then it is + 175 pound. Say B. had of 2400 pound, 1000 pound, and C. 1400 pound, proceede as followeth, it will be + 250 pound.

$$\begin{array}{r} 900 + 175 \\ 1000 + 250 \end{array} \quad 75: \text{the denisor.}$$

Woꝛke as the rule requireth, it is 666 pound  $\frac{2}{3}$  for B, which take out of 2400 pound, there resteth yet 1733  $\frac{1}{3}$  for C. and thereto  $\frac{1}{2}$  of part of A. and B. their monies, which is 152 l.  $\frac{2}{3}$ , it maketh 1885 pound  $\frac{1}{3}$ , which should be 1200 l. it is therefore + 685  $\frac{1}{3}$ , then do as the rule requireth.

A	B	C			
300	600	2100	+ 1028 $\frac{1}{2}$	7200	— 3
400	666 $\frac{2}{3}$	1733 $\frac{1}{3}$	+ 625 $\frac{1}{3}$	4800	— 2    1 denisor.

Woꝛke as the rule requireth, it will be 600 l. for A, 800 l. for B, and 1000 l. for C, which you may proceede as followeth.

Otherwise.

Say A. had 500 l. that substract from 1200 l. resteth 700 l. the  $\frac{1}{2}$  part then of B. and C. money, must be 700 pound, then their moneys together was 2100 pound, to that adde 500 l. of A. money, it maketh 2600 pound for A. and B. and C, out of that substract 1200 pound, that B. must giue for the share, resteth 1400 l. which is as much as  $\frac{2}{3}$  parts of A. & C. money: thereunto adde 466  $\frac{2}{3}$  parts, as the  $\frac{1}{2}$  part (for 1400 l. is the  $\frac{1}{2}$  parts, then 466  $\frac{2}{3}$  must be the  $\frac{1}{2}$  part befoꝛe you can haue the whole

## The Pathvay to knowledge.

Whole summe of A. and C. money) it will make  $1866 \frac{2}{3}$  for A. and C. money: now you say that A. hath 500 pound, then C. must haue  $1366 \frac{2}{3}$ , which subtract out of 2100 pound B. and C. money, there resteth  $733 \frac{1}{3}$  partes, so much hath B. out of that subtract  $\frac{1}{3}$  parte that C. requireth, which is  $104 \frac{2}{3}$ : which adde vnto the  $\frac{1}{3}$  part of A. money which C. will likewise haue of him, which is  $71 \frac{1}{3}$  it will make  $176 \frac{1}{3}$  which adde vnto  $1366 \frac{2}{3}$  the money of C. it maketh  $1542 \frac{1}{3}$  which should be but 1200 pound, therefore it is  $+342 \frac{2}{3}$ . Set therefore another number for A. as 700 pound, and worke as you should, it will be  $-342 \frac{2}{3}$  as by the proese will appeare.

1200	
500 A.	
700 $\frac{1}{3}$ part of B. and C.	
2100 for B. and C. money.	
500	
2600 for A. B. and C.	
1200 for B.	
1400 the $\frac{2}{3}$ part of A. & C.	
466 $\frac{2}{3}$ is $\frac{1}{3}$ part.	
1866 $\frac{2}{3}$ for A. and C.	

1200	
700 for A.	
500 $\frac{1}{3}$ part of B. and C.	
1500 is for B. and C.	
700 for A.	
2200 for A. B. and C.	
1200 for B.	
1000 is $\frac{2}{3}$ parts of A. & C.	
333 $\frac{1}{3}$ is $\frac{1}{3}$ part.	
1333 $\frac{1}{3}$ for A. and C.	
700 for A.	
633 $\frac{1}{3}$ for C.	

1866 $\frac{2}{3}$	
500 for A.	
1366 $\frac{2}{3}$ for C.	
2100 for B. & C.	
1366 $\frac{2}{3}$	
733 $\frac{1}{3}$ for B.	
104 $\frac{2}{3}$ is $\frac{1}{3}$ of B.	
71 $\frac{1}{3}$ is $\frac{1}{3}$ of A.	
1366 $\frac{2}{3}$ for C.	
1542 $\frac{1}{3}$ it should be 1200, it	
is to $+342 \frac{2}{3}$ .	

1500 for B. and C.	
633 $\frac{1}{3}$ for C.	
866 $\frac{2}{3}$ for B.	
127 $\frac{1}{3}$ for $\frac{1}{3}$ for B.	
100 is $\frac{2}{3}$ part of A.	
633 $\frac{1}{3}$ is for C.	
857 $\frac{1}{3}$ and it should be	
1200 l. it is therefore 342	
$\frac{2}{3}$ l.	

## The Pathvay to knowvledge.

$$\begin{array}{r} 500 + 342 \frac{2}{7} \\ 700 - 343 \frac{5}{7} \end{array}$$

facit 600 pound for A. and for B.  
800. and for C 1000 pound.

Othervvise by the rule of  
quantitie.

Say the first had 1 £ so the other 2 had 1 A. pound, and then  
1 £ +  $\frac{1}{2}$  A. were like 1200 pound and 1 A. like 3600 — 3 £,  
to that adde the first mans money, as 1 £ it maketh 3600 l.  
— 2 £ for all three of their moneys, the other had 1 B. then the  
other 2 must haue had 3600 pound, — £ — 1 B. whereof the  
 $\frac{1}{4}$  part is 900 pound, —  $\frac{1}{2}$  £ —  $\frac{1}{4}$  B. which adde vnto 1 B. it  
maketh  $\frac{1}{2}$  B + 900 pound —  $\frac{1}{2}$  £, like 1200 pound, and 1 B  
shall be like 400 +  $\frac{1}{2}$  £ for the second mans money, and for the  
third on an I let that he had 1 C. l. then the other 2 had 3600 —  
2 £ — 1 C. whereof the  $\frac{2}{3}$  part is 514  $\frac{2}{3}$  —  $\frac{2}{3}$  £ —  $\frac{1}{3}$  C. the 3  
mans money it maketh  $\frac{1}{3}$  C. + 514  $\frac{2}{3}$  —  $\frac{2}{3}$  £ like 1200, and 1  
C. shall be like 800 +  $\frac{1}{3}$  £, for the third mans money, then say.

The first is set — 1 £

The second is — 400 +  $\frac{1}{2}$  £

The third is — 800 +  $\frac{1}{3}$  £

The summe of all their monies is 1200 + 2 £ like 3600  
— 2 £ and 1 £ shall be like 600 pound, for the first, the second  
is found 400 +  $\frac{1}{2}$  £ at 600 pound for 1 £ is 800 pound, for the  
second, and 1000 pound for the third as before.

# The Pathway to knowledge.

## The rule of Series or verginum.

There are 16 persons men and women, that haue spent 57 s. whereof a man must pay 4 pence, and a woman 3 pence: the question is, how many men, and how many women they were.

16 persons. { a man 4 s. } 1 for denisor, spent 57 s.  
                  { a woman 3 s. }

Take 3 pence from 4 pence, rests 1 for denisor: then multiply 16 by 3 facit 48, which take out of 57 rests 9, which deuide by 1 rests 9, which is 9 men that were there, which subtract out of 16, there rests 7, and so many women they were.

There are 24 persons, men, women, and children, that spent 43 shillings, whereof a man must pay 3 shil. a woman 2 shilling, and a childe 8 pence. The question is, how many men, women, and children they were severally: say.

24 persons.	48	40	688 pence.
8	32	24	192 and 43 shil.
<hr/> 192	8		<hr/> 496
	496 (10 men,		10 children,
96/4	440 (4 women.		10 men.
25	<hr/> 14		4 women.
			<hr/> 24

A man hath 3 sorts of silver, the first is 7 pence fine the mark, the second 9 pence fine, and the third is 11 pence fine the mark: of these three sorts of silver he will make a peece of worke of 20 markes, which shall holde 10 penny waight fine the marke: the question is, how much of each sort he shall take.

# The Pathway to knowledge.

$$\begin{array}{r} 20 \\ 7 \\ \hline 140 \end{array}$$

$$\begin{array}{r} 110. \\ 9 \\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 200 \text{ d.} \\ 140 \\ \hline 60, \end{array}$$
 make 20 markes siluer at  
10 d. waight fine.

$$\begin{array}{r} 12/6 \\ 2 \end{array}$$

(1  
 2(2  
 60 (12 marke at 11 d.  
 64 (6 marke at 9 pence.  
 2 marke at 7 pence.

A man hath 200 pence to bestowe, for the which he will buy fowle, as Geese, Black-birdes, and Finches, whereof one Goose is 10 pence, a Black-bird 2 pence, and 10 Finches one penny. The question is, how many Geese, Black-birdes and Finches, he must have for his 200 pence.

$$\begin{array}{r} 100 \\ 1 \\ \hline 100 \end{array}$$

$$\begin{array}{r} 101 \\ 20. \\ \hline 110. \end{array}$$

$$\begin{array}{r} 100 \\ 20 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 99 \\ 19 \\ \hline \end{array}$$

$$\begin{array}{r} 200 \\ 10 \\ \hline 2000 \\ 100 \\ \hline 1900 \end{array}$$

$$\begin{array}{r} 100 \\ 20 \\ \hline 80 \text{ finches.} \end{array}$$

$$\begin{array}{r} 1/1 \\ 90 \\ 01/9 \\ 1900 (19 \text{ Geese.} \\ 999 \text{ 1 Black-bird.} \end{array}$$

$$\begin{array}{r} 19 (1 \text{ Black-bird.} \\ 19 \end{array}$$

A Merchant hath bought 24 pound of Spice, for 48 pound, that is Pepper, Ginger, and Sugar, the 4 pound of Pepper cost 9 s. and so much cost 6 pound of Ginger, and 9 pound of Ginger cost as much as 12 pound of Sugar: the question how much of each sort he bought. Now seeing that the 9 l. of Ginger cost as much as 12 pound of Sugar, therefore say, if 6 pound of Ginger cost 9 shil. what shall 9 pound cost, facit 13 shil.  $\frac{1}{2}$ , so much also cost the 12 l. of Sugar. Now we call how much 1 pound of each cost a part, and say: If 4 pound of Pepper cost 9 shillings, what shall 1 pound cost 2 shillings  $\frac{1}{4}$ . If 6 pound of Ginger cost

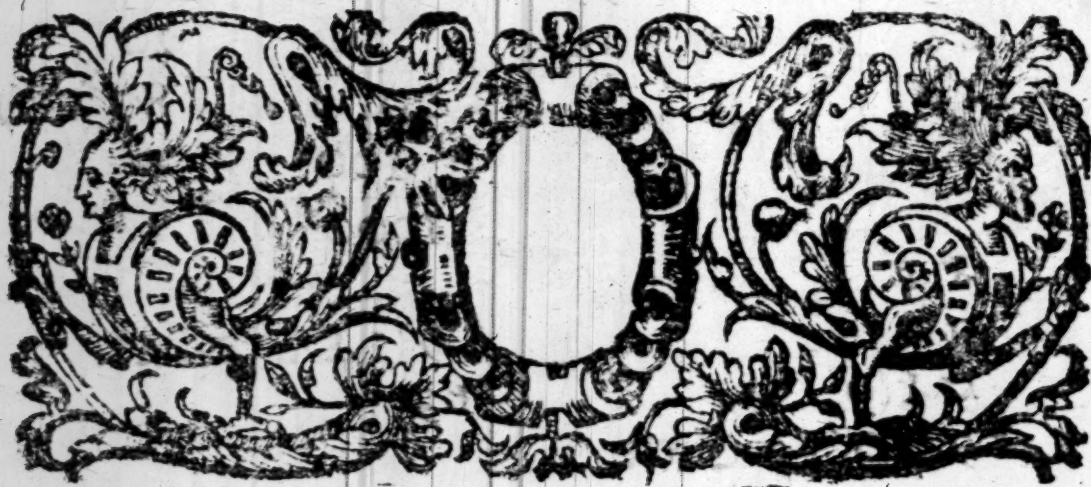
# The Pathway to knowledge.

cost 9 shillings, what shall 1 pound cost, facit 1 shill.  $\frac{1}{2}$ . 3 l. of  
 Sugar cost 13 shillings  $\frac{1}{2}$ , what shall 1 pound cost, facit 1 s.  $\frac{1}{4}$ .  
 Now let it as the rule requireth, and make it all in  $\frac{1}{4}$  parts.

24	2 $\frac{1}{4}$	18 9	48 s.	384	24
9	1 $\frac{1}{2}$	12 3	8	216	20
<u>216</u>	1 $\frac{1}{4}$	9	<u>384</u>	<u>168</u>	<u>4</u>

76  
 268 (18 l. of Pepper.  
 09 (2 l. of Ginger.  
 4 l. of Sugar.

FINIS.



# The Pathway to knowledge.



## The Characters and Figures, vsed in the rules of Collicke numbers.

- N** Signifieth a simple number, as if it had no figure.
- 2**  $\sqrt{\phantom{x}}$  the roote of any number.
- 4**  $\boxtimes$  Zensus, which betokeneth a square number.
- 8**  $\text{C}$  Cubus, a cubicke number foure square like a die.
- 16**  $\boxtimes\boxtimes$  is the signe of a square of squares, or Zenzizenzike.
- 32**  $\boxtimes\text{C}$  standeth for a sursolid, which riseth from  $\boxtimes$  and  $\text{C}$ , multiplied together.
- 64**  $\boxtimes\text{C}\text{C}$  Senficubus, or a square of squares, rising from  $\boxtimes$ , into  $\boxtimes\boxtimes$ .
- 128**  $\text{B}$   $\boxtimes\text{C}$  betokeneth a second sursolid, from  $\text{C}$  in  $\boxtimes\boxtimes$ .
- 256**  $\boxtimes\boxtimes\boxtimes$  presenteth a square of squares, squared from  $\boxtimes\boxtimes$ , in  $\boxtimes\boxtimes$ .
- 512**  $\text{C}\text{C}\text{C}$  a cube of cubes, which riseth of  $\boxtimes\boxtimes$  in  $\boxtimes$ .
- ✓ signifieth a roote according vnto the figure that is layned with it, as ✓  $\boxtimes$  signifieth, to finde the square roote of a number and so it is vnderstode, likewise when it standeth alone by it selfe ✓, and when you should finde the cubickerote, then you must set ✓  $\text{C}$  and for the Zenzizenzike, roote ✓  $\boxtimes\boxtimes$ , or ✓ ✓ and as often as you haue rootes to finde out, so often must you adde this ✓: as if you would finde the cubicke roote of 9, and out of the production thereof ✓  $\text{C}$  then set it thus ✓ ✓  $\text{C}$  9.
- V** signifieth vniuersall, + betokeneth more, and — sheweth lesse.

## The Pathvway to knowvledge.

I. 3	2								
I. 6	3	3							
I. 9	4	6	4						
I. 12	5	10	10	5					
I. 15	6	15	20	15	6				
I. 18	7	21	35	35	21	7			
I. 21	8	28	56	70	56	28	8		
I. 24	9	36	84	126	126	84	36	9	

### To finde the square roote of any number.

**T**O finde the square roote of any number, as of 181476, set over the figure 6, one prick, and upon the third figure next to it one prick, and so upon each third figure a prick, to the end of your number, alwaies leaving one figure betwene two prick, and as many prickes as there be made over the figures, so many figures shall be in the quotient: then begin and take out the square roote of 18, (being the first prick on the left hand,) which is 4, that set in the quotient, the square whereof is 16, which subtract out of 18, resteth 2, which set over the figure 8, then double the 4 in the quotient it maketh 8, which you must take as often out of 21, that the quadrant, or square number of the second figure, in the quotient may also be taken out of the second prick, that is 2, which multiply by 8, it maketh 16, which subtract from 21, there resteth 5, which you must set over the figure 1, then multiply 2 in it selfe, it maketh 4, which take out of 54, there resteth 50 in the second point, then double 42 in the quotient, it maketh 84 which set under 507, and say, how many times 84 in 507 it maketh 6 for the 3 figure in y<sup>e</sup> quotient, the say, 6 times 84, is 504, which subtract out of 507, resteth 3, which set over the 7, and set over 6 in the quotient, under the 6 figure that is marked with the last point, and

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and say, 6 times 6, is 36, which take out of 36, there resteth 0, and then the summe of this extraction of 181476, is 326, which is pꝛoued by multiplying 426 in it selfe, and it maketh 181476.

$$\begin{array}{r}
 2 \\
 2503 \\
 \cdot \quad \cdot \quad \cdot \\
 181476 \quad (426 \\
 8246 \\
 8
 \end{array}$$

## To extract a cubicke roote.

**T**o extractt the cubicke roote out of 12812904, set a pꝛicke vpon the first figure, on the right hand, that is vpon the 4, then another pꝛicke vpon the fourth figure after it which is vpon 2, and so to the end of the whole summe, alwaies leaving betwene euery 2 pꝛickes, 2 figures, and as many pꝛickes as are made, so many figures shall be found in the margent, then begin and seeke the Cubicke roote of 12. the last pꝛicke on the left hand, which is 2, for 2 times 2, and 2 times 2 make 8, which take out of 12 there resteth 4, which you must set ouer the 2, then to finde the second figure in the quotient, set the figure 2 and his square 4 and multiply each a part by 3, and they make 6 and 12 then you must set a new number in the quotient in this manner, that is, multiply the 12 by the new number, which is 3, and 6 by the quadꝛant of the same 3, which is 9, and then multiply the new number Cubike wise in it selfe, and placing these three numbers one vnder the other as hereafter is set downe, you shall subtract that addition from the rest of your deuision and there will remaine 645904. Now to finde the third figure in the quotient out of the same summe, set 23. and the quadꝛant thereof, which is 529. and multiply each number by 3, they make 69 and 1587, then you must finde a new figure to set in the quotient in such manner that as you multiply the 1587 by the new figure, which is 4, and the 69 by the quadꝛant of the said 4, which is 16, and the said new figure Cubike wise

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In it selfe, the said 3 numbers being placed orderly one under the other as followeth, you may subtract the same out of the rest of the division, and there will rest 0, and the quotient shall be 234 for your demand.

4 5  
 . 6 4 .  
 1 2 8 1 2 9 0 4 (234  
 4 1 6 7 9 0 4  
 6 4 5

	23 ୧	529 ୪
	3	3
64 ୧	69	1587
	16 ୪	4 ୧
	1104	6348
		1104
		64
		645904

୧	୪	୯
୨	୫	୧୦
୩	୬	୧୧
୪	୭	୧୨
୫	୮	୧୩
୬	୯	୧୪
୭	୧୦	୧୫
୮	୧୧	୧୬
୯	୧୨	୧୭
୧୦	୧୩	୧୮
୧୧	୧୪	୧୯
୧୨	୧୫	୨୦
୧୩	୧୬	୨୧
୧୪	୧୭	୨୨
୧୫	୧୮	୨୩
୧୬	୧୯	୨୪
୧୭	୨୦	୨୫
୧୮	୨୧	୨୬
୧୯	୨୨	୨୭
୨୦	୨୩	୨୮
୨୧	୨୪	୨୯
୨୨	୨୫	୩୦
୨୩	୨୬	୩୧
୨୪	୨୭	୩୨
୨୫	୨୮	୩୩
୨୬	୨୯	୩୪
୨୭	୩୦	୩୫
୨୮	୩୧	୩୬
୨୯	୩୨	୩୭
୩୦	୩୩	୩୮
୩୧	୩୪	୩୯
୩୨	୩୫	୪୦
୩୩	୩୬	୪୧
୩୪	୩୭	୪୨
୩୫	୩୮	୪୩
୩୬	୩୯	୪୪
୩୭	୪୦	୪୫
୩୮	୪୧	୪୬
୩୯	୪୨	୪୭
୪୦	୪୩	୪୮
୪୧	୪୪	୪୯
୪୨	୪୫	୫୦
୪୩	୪୬	୫୧
୪୪	୪୭	୫୨
୪୫	୪୮	୫୩
୪୬	୪୯	୫୪
୪୭	୫୦	୫୫
୪୮	୫୧	୫୬
୪୯	୫୨	୫୭
୫୦	୫୩	୫୮
୫୧	୫୪	୫୯
୫୨	୫୫	୬୦
୫୩	୫୬	୬୧
୫୪	୫୭	୬୨
୫୫	୫୮	୬୩
୫୬	୫୯	୬୪
୫୭	୬୦	୬୫
୫୮	୬୧	୬୬
୫୯	୬୨	୬୭
୬୦	୬୩	୬୮
୬୧	୬୪	୬୯
୬୨	୬୫	୭୦
୬୩	୬୬	୭୧
୬୪	୬୭	୭୨
୬୫	୬୮	୭୩
୬୬	୬୯	୭୪
୬୭	୭୦	୭୫
୬୮	୭୧	୭୬
୬୯	୭୨	୭୭
୭୦	୭୩	୭୮
୭୧	୭୪	୭୯
୭୨	୭୫	୮୦
୭୩	୭୬	୮୧
୭୪	୭୭	୮୨
୭୫	୭୮	୮୩
୭୬	୭୯	୮୪
୭୭	୮୦	୮୫
୭୮	୮୧	୮୬
୭୯	୮୨	୮୭
୮୦	୮୩	୮୮
୮୧	୮୪	୮୯
୮୨	୮୫	୯୦
୮୩	୮୬	୯୧
୮୪	୮୭	୯୨
୮୫	୮୮	୯୩
୮୬	୮୯	୯୪
୮୭	୯୦	୯୫
୮୮	୯୧	୯୬
୮୯	୯୨	୯୭
୯୦	୯୩	୯୮
୯୧	୯୪	୯୯
୯୨	୯୫	୧୦୦

There is a number, which if it be multiplied in it selfe, and the production thereof in it selfe, it maketh 1679616: the question is, what number it is. Extract the square roote of 1679616 it maketh 1296, out of the which you must extract the square roote once againe, it maketh 36, which is the number you demand to know, or extract  $\sqrt{36}$  out of 1679616, there will likewise fall out 36, as I said before.

	20	8	0	88
	3	9	27	81
86	4	6	4	
	<hr/>			
	12	54	108	
267961036	88	0	20	
88	1296	216	36	6
869610	<hr/>			
	2592	1944	604	
			1944	
			2592	
			1296	
			<hr/>	
			869616	

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There is a number which if you multiply in it selfe, and the production by the same number, and the second production by the same number, and the third production by the same number, they will amount to the sum of 7962624, the question is, what number it is: extract the square root as followeth.

$  \begin{array}{r}  47 \\  \cdot \\  7962624 \text{ (24)} \\  32 \\  \hline  4762624  \end{array}  $	$  \begin{array}{r}  20 \quad 8 \quad 20 \quad 80 \quad 8 \\  2 \quad 4 \quad 8 \quad 16 \quad 32 \\  5 \quad 10 \quad 10 \quad 5 \\  \hline  10 \quad 40 \quad 80 \quad 80  \end{array}  $	$  \begin{array}{r}  320 \\  1280 \\  2560 \\  2560 \\  1024 \\  \hline  4762624  \end{array}  $
---	---	--

$1024 \text{ } \mathcal{R}. \quad 256 \mathcal{R}\mathcal{R}. \quad 64 \mathcal{C}. \quad 16 \mathcal{R}. \quad 4 \mathcal{C} \text{ the second figure.}$   
 $2560 \quad 2560 \quad 1280 \quad 320.$

Also to extract the root out of any broken number, then extract the root first out of the numerator, and then out of the denominator, and the production will make a broken number.

The square root extracted out of  $\frac{16}{9}$  there proceedeth  $\frac{4}{3}$ .

The square root extracted out of  $28 \frac{1}{2}$ , there proceedeth  $5 \frac{1}{2}$ , that is,  $5 \frac{1}{2}$  or  $5 \frac{1}{2}$ .

The Cubick root extracted out of  $\frac{27}{8}$ , there proceedeth  $\frac{3}{2}$ .

The Cubick root extracted out of  $144 \frac{1}{4}$ , or out of  $36 \frac{1}{4}$  proceedeth  $4 \frac{1}{2}$ , or  $5 \frac{1}{2}$ .

To extract the root of an broken number, that is a number out of the which it is not possible to extract the root, but there will rest somewhat over, as if you would extract the square root out of 18, which is not possible, but there will be a remainder, yet the root may so be taken out, that there shall not much want to extract, which to doe, adde vnto 18 five 0, which maketh it 18000000, out of the which extract the root, in manner as before is taught, and it shall make 4242, and yet there will remaine somewhat, although no great matter, and because you added 6 figures, or 0 vnto the 18, whereof 3 is the halfe.

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therefore you must cut off 3 figures (on the right hand) from the 4242, and the extraction of the summe shall be very neere  $4 \frac{242}{1000}$  or  $4 \frac{241}{1000}$ , for that with the base of the 0 you must compute the quotient, and how much the nearer you desire to bring the production unto, so many times two 0 must you still attribute to it, as if you had added eight 0 then you must divide the quotient of the extraction, by the base of the 0 as 0000, and it will make  $4 \frac{2416}{10000}$  for the answer of your question.

To extract  $\sqrt{\text{C}}$  out of an uneven number, you must adde therewith three 0 as you doe in  $\sqrt{\text{Z}}$  two 0, and as often as you adde three 0 therewith, so many times must you cut off one figure from the quotient on the right hand. For example, extract  $\sqrt{\text{C}}$  out of 66, adde to 66 six 0 it maketh 66000000, out of  $\sqrt{\text{C}}$ , after the manner before expressed, it maketh 404 and yet there resteth somewhat, which is not of much value, and because you added six 0 to the 66, therefore cut off 2 figures on the right hand, and the extraction will be about  $4 \frac{4}{100}$  or  $4 \frac{1}{25}$  &c. and for the  $\sqrt{\text{Z}}$  to extract it out of a number unreasonable, or surd so called, you shall adde so many times foure 0, and for the extraction of  $\sqrt{\text{S}}$ , so many times five 0, so increasing each extraction by 0, and as many times as you adde 0, required to each extraction, so many figures will be in the broken number, and that resteth shall be the whole summe.

## Addition in Cossicke numbers.

**A**dde like quantities, or numbers together, as N with N.  $\text{C}$  with  $\text{C}$   $\text{Z}$  with  $\text{Z}$ , and when you adde + with +, make such a crosse + and if it be — with — make such a — but as you will adde + — with — or — with + then subtract the one number out of the other, and write the signe of the greatest number by the remainor, as in the example following you shall perceiue.

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$10\text{℥} + 8$	$8\text{℥} + 7$	$9\text{℥} + 12$
$8\text{℥} + 6$	$6\text{℥} - 12$	$5\text{℥} - 5$
$18\text{℥} + 14$	$14\text{℥} - 5$	$14\text{℥} + 7$
$5\text{℥} - 9$	$3\text{℥} - 4\text{℥}$	$5\text{℥} - 6\text{℥}$
$4\text{℥} + 1$	$2\text{℥} - 8\text{℥}$	$6\text{℥} + 9\text{℥}$
$9\text{℥} - 8$	$5\text{℥} - 12\text{℥}$	$11\text{℥} + 3\text{℥}$

$6\text{℥} + 3\text{℥}$	$4\text{℥} + 6\text{℥} + 8$
$4\text{℥} - 4\text{℥}$	$3\text{℥} + 5\text{℥} - 10\text{℥}$
$10\text{℥} - 1\text{℥}$	$5\text{℥} + 7\text{℥} - 4\text{℥} + 8$

## Subtraction in Cosslike numbers:

Subtract like quantities or numbers one out of the other, as N from N, ℥ from ℥, and ℥ from ℥, and as you will subtract + from +, or — from —, and that the upper summe is greater then the lower, then take the one out of the other, and set the marke of the uppermost summe by the subtraction, but if the upper summe be lesse then the lower summe, then subtract the one from the other, and set the contrary token by the summe subtracted, as followeth.

$14\text{℥} + 7$	$8\text{℥} - 9$	$12\text{℥} + 10\text{℥}$	$10\text{℥} - 6$
$6\text{℥} + 4$	$3\text{℥} - 2$	$4\text{℥} + 12\text{℥}$	$4\text{℥} - 7$
$8\text{℥} + 3$	$5\text{℥} - 7$	$8\text{℥} - 2\text{℥}$	$6\text{℥} + 1$

And if you will subtract + from —, or — from +, then adde them, and set the marke or token of the uppermost summe by the addition as followeth.

$9\text{℥}$	$9\text{℥} + 10$	$5\text{℥} - 3\text{℥}$	$8\text{℥} + 4 - 3\text{℥}$
$5\text{℥}$	$\text{℥} - 4$	$1\text{℥} + 4\text{℥}$	$2\text{℥} + 2$
$9\text{℥} 5\text{℥}$	$6\text{℥} + 14$	$4\text{℥} - 7\text{℥}$	$6\text{℥} + 2 - 3\text{℥}$

$$\begin{array}{r} 6\text{℥} + 4\text{℥} + 6 \\ 3\text{℥} - 1\text{℥} \\ \hline 3\text{℥} + 5\text{℥} + 6 \end{array}$$

$$\begin{array}{r} 9\text{℥} + 7\text{℥} \\ 4\text{℥} + 3\text{℥} - 9 \\ \hline 5\text{℥} + 4\text{℥} - 9 \end{array}$$

$$\begin{array}{r} 12\text{℥} + 10 \\ 3\text{℥} - 9 + 2\text{℥} \\ \hline 9\text{℥} + 19 - 2\text{℥} \end{array}$$

Q 3

Multi-

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## Multiplication in Cossike numbers.

Set the quantities or numbers one vnder the other, and write N and O over  $\mathcal{C}$  a figure of 1. Over  $\mathcal{Z}$  the figure of 2. Over  $\mathcal{L}$  the figure of 3, and so vnto the end of your numbers, and when you desire to know what number it will make when  $\mathcal{Z}$  &  $\mathcal{C}$  are multiplied together, then looke what figure is found above the  $\mathcal{C}$ , which is 1, as over  $\mathcal{Z}$  standeth 2, which added vnto the 1, it maketh 3, and the same number, or quantity, where the figure 3 is found over, shall be the multiplication, as  $\mathcal{C}$  &  $\mathcal{Z}$  make a  $\mathcal{C}$ , and  $\mathcal{Z}$  &  $\mathcal{Z}$  multiplied in it selfe, amounteth vnto 1  $\mathcal{Z}$   $\mathcal{Z}$   $\mathcal{Z}$ , for 4 which standeth over  $\mathcal{Z}$   $\mathcal{Z}$ , being added vnto 4, maketh 8, which standeth over  $\mathcal{Z}$   $\mathcal{Z}$   $\mathcal{Z}$ , and when you multiply 1  $\mathcal{C}$  by 1  $\mathcal{Z}$   $\mathcal{C}$ , there will amount 1  $\mathcal{C}$   $\mathcal{C}$ , and when you multiply a number or quantity by N, then the quantity keepeth still her owne name, as if you multiply 3 N, by 4  $\mathcal{Z}$ , it maketh 12  $\mathcal{Z}$ , and 2 N by 3  $\mathcal{C}$ , maketh 6  $\mathcal{C}$ .

<sup>0</sup> N	<sup>2</sup> $\mathcal{C}$	<sup>2</sup> $\mathcal{Z}$	<sup>3</sup> $\mathcal{C}$	<sup>4</sup> $\mathcal{Z}$ $\mathcal{Z}$	<sup>5</sup> $\mathcal{Z}$	<sup>6</sup> $\mathcal{Z}$ $\mathcal{C}$
	<sup>7</sup> 1 $\mathcal{Z}$	<sup>8</sup> $\mathcal{Z}$ $\mathcal{Z}$ $\mathcal{Z}$	<sup>9</sup> $\mathcal{C}$ $\mathcal{C}$	<sup>10</sup> $\mathcal{Z}$ $\mathcal{Z}$		

When you multiply + by + or — by — there alwaies be +, and when you multiply — by + or + by — there will proceed —.

$$\begin{array}{r} 4\mathcal{C} + 6 \\ 5\mathcal{C} \\ \hline 20\mathcal{Z} + 30\mathcal{C} \end{array}$$

$$\begin{array}{r} 3\mathcal{C} + 4 \\ 4\mathcal{C} + 6 \\ \hline 12\mathcal{Z} + 16\mathcal{C} \\ + 18\mathcal{C} + 24 \\ \hline 12\mathcal{Z} + 34\mathcal{C} + 24 \end{array}$$

$$\begin{array}{r} 4\mathcal{Z} - 3\mathcal{C} \\ 2\mathcal{C} - 1 \\ \hline 8\mathcal{C} - 6\mathcal{Z} \\ - 4\mathcal{Z} + 3\mathcal{C} \\ \hline 8\mathcal{C} - 10\mathcal{Z} + 3\mathcal{C} \end{array}$$

$$\begin{array}{r} 6\mathcal{C} + 4 \\ 4\mathcal{C} - 3 \\ \hline 24\mathcal{Z} + 16\mathcal{C} \\ - 18\mathcal{C} - 12 \\ \hline 24\mathcal{Z} - 2\mathcal{C} - 12 \end{array}$$

Dial

# The Pathway to knowledge.

## Diuision in collicke numbers.

When you deuide the greater number by the lesse and desire to knowe the name of the quantitie in the quotient, then set the Characters in manner as followeth.

0 N	1 ℥	2 ꝛ	3 ℥	4 ꝛꝛ	5 ꝛ	6 ꝛ℥
7 Bꝛ	8 ꝛꝛꝛ	9 ℥℥	10 ꝛꝛ			

Now if you desire to deuide 8ꝛ by 2 ℥, then subtract the figure 1 that you finde aboue the ℥, from 2 that you finde aboue ꝛ, there will rest 1, that sheweth that the number in the quotient must be ℥, and if you will deuide Bꝛ by ꝛ, then subtract 5 fro 7, resteth 2, which is alone ꝛ, then the quotient must be ꝛ. And if you will deuide ꝛ℥ by ꝛ℥, subtract 6 from 6, there resteth 0, which standeth ouer N, therefore the quotient thereof shall be N, and when you deuide a quantitie by N, the quotient shall keepe the name of the same quantitie deuided, for that N altereth not any quantitie, either in diuision or multiplication.

$$\begin{array}{r}
 8\text{ꝛ} \overline{) 4\text{℥}} \\
 4\text{℥} \\
 \hline
 0\text{℥}
 \end{array}
 \quad
 \begin{array}{r}
 3 \\
 1\text{ꝛ} \overline{) 5\text{ꝛ}} \quad 2\text{ꝛ} \\
 5\text{ꝛ} \\
 \hline
 0\text{ꝛ}
 \end{array}
 \quad
 \begin{array}{r}
 4\text{℥} \overline{) 2\text{℥}} \\
 4\text{℥} \\
 \hline
 0\text{℥}
 \end{array}$$

If the smallest quantitie be deuided by the greatest, then set the deuisor vnder the deident, then subtract them as it is before shewed, so there will alwaies be in the quotient N for the number demanded, as for example.

Deuide 12 ℥ by 2 ꝛꝛ, set it thus

$$\begin{array}{r}
 12\text{℥} \overline{) 6\text{℥}} \quad 6\text{N} \\
 2\text{ꝛꝛ} \overline{) 12\text{ꝛ}} \quad 6\text{ꝛ}
 \end{array}$$

And 13 ꝛ by 3 ℥℥ is

$$\begin{array}{r}
 13\text{ꝛ} \overline{) 4\text{ꝛ}} \quad 4\text{ꝛ} \\
 3\text{ꝛꝛ} \overline{) 13\text{ꝛ}} \quad 4\text{ꝛ}
 \end{array}$$

5 ℥ by 8 N make

$$\begin{array}{r}
 5\text{℥} \overline{) 8\text{N}} \quad 8\text{N} \\
 8\text{N} \\
 \hline
 0\text{N}
 \end{array}$$

3 ꝛ by 4 N, make

$$\begin{array}{r}
 3\text{ꝛ} \overline{) 4\text{N}} \quad 4\text{N} \\
 4\text{N} \\
 \hline
 0\text{N}
 \end{array}$$

6 N by 5 ꝛ, make

$$\begin{array}{r}
 6\text{N} \overline{) 5\text{ꝛ}} \quad 5\text{ꝛ} \\
 5\text{ꝛ} \\
 \hline
 1\text{ꝛ}
 \end{array}$$

7 ℥ deuided by 5 ꝛ, make

$$\begin{array}{r}
 7\text{℥} \overline{) 5\text{ꝛ}} \quad 5\text{ꝛ} \\
 5\text{ꝛ} \\
 \hline
 2\text{ꝛ}
 \end{array}$$

## The Pathway to knowvledge.

If you will deuide diuers quantities by a quantitie of diuers qualities, then doe onely set the deuisor vnder the deuiant, as if you should deuide  $6\text{ } \mathcal{Z} + 9$ , by  $4\text{ } \mathcal{Z} + 2$ , or  $5\text{ } \mathcal{L} + 3\text{ } \mathcal{Z}$  by  $6\text{ } \mathcal{L} + 2$ , then place them as followeth.

$$\frac{6\text{ } \mathcal{Z} + 9}{4\text{ } \mathcal{Z} + 2}$$

$$\frac{5\text{ } \mathcal{L} + 3\text{ } \mathcal{Z}}{6\text{ } \mathcal{L} + 2}$$

## Addition in Coflike broken numbers.

**E** Ach summe written with a numerator, and a denominator, is called a broken number, & heretofore that above is called the numerator, and that vnder the denominator, as well in quantities of diuers qualities, as in one quantitie alone. To adde  $\frac{3}{4}\text{ } \mathcal{Z}$  with  $\frac{1}{2}\text{ } \mathcal{L}$  multiply crosse wise  $6\text{ } \mathcal{Z}$  with  $4\text{ } \mathcal{N}$ , it maketh  $24\text{ } \mathcal{Z}$ , then  $3\text{ } \mathcal{L}$  with  $7\text{ } \mathcal{N}$ , it maketh  $21\text{ } \mathcal{L}$ , which adde to  $24\text{ } \mathcal{Z}$ , they make  $24\text{ } \mathcal{Z} + 21\text{ } \mathcal{L}$ , for the question sought, then multiply  $7\text{ } \mathcal{N}$ , by  $4\text{ } \mathcal{N}$ , they make  $28\text{ } \mathcal{N}$ , which is.

$$\frac{24\text{ } \mathcal{Z} + 21\text{ } \mathcal{L}}{28\text{ } \mathcal{N}} \text{ or } \frac{3\text{ } \mathcal{Z} + \frac{1}{2}\text{ } \mathcal{L}}{1\text{ } \mathcal{N}} \text{ or } \frac{3}{4}\text{ } \mathcal{Z} + \frac{1}{2}\text{ } \mathcal{L}.$$

$$\frac{3\text{ } \mathcal{N}}{4\text{ } \mathcal{L}} \text{ added to } \frac{4\text{ } \mathcal{N}}{5\text{ } \mathcal{Z}} \text{ make } \frac{15\text{ } \mathcal{Z} + 16\text{ } \mathcal{L}}{20\text{ } \mathcal{L}}$$

$$7\text{ } \mathcal{L} \text{ added to } \frac{3}{4}\text{ } \mathcal{Z} \text{ make } \frac{5\text{ } \mathcal{Z} + 56\text{ } \mathcal{L}}{8\text{ } \mathcal{N}}$$

$$\frac{8\text{ } \mathcal{N}}{3\text{ } \mathcal{L}} \text{ added to } \frac{8}{4\text{ } \mathcal{L} - 5} \text{ make } \frac{56\text{ } \mathcal{L} - 40}{12\text{ } \mathcal{Z} - 15\text{ } \mathcal{L}}$$

$$\frac{5\text{ } \mathcal{N}}{4\text{ } \mathcal{L} - 6} \text{ added to } \frac{4\text{ } \mathcal{Z} + 2}{1\text{ } \mathcal{L} + 3} \text{ make } \frac{4\text{ } \mathcal{Z} + 9}{1\text{ } \mathcal{L} + 3}$$

Because the denominators are one like the other, then adde the numerators together, and set one denominator vnder them.

Substraction

## The Pathway to knowledge.

### Subtraction in Coslike broken numbers.

To subtract one broken number from the other, there is no other way then as you doe in addition, onely that in place of adding you must here subtract the one number out of the other.

To subtract  $\frac{1}{4} \frac{N}{\text{℥}}$  out of  $\frac{5}{8} \frac{N}{\text{℥}}$  resteth  $\frac{12}{32} \frac{\text{℥}}{\text{℥}}$ .

To subtract  $\frac{3}{7} \frac{\text{℥}}{\text{℥}} - 5$  out of  $\frac{7}{3 \text{ ℥} + 5}$  rests  $\frac{74}{21 \text{ ℥} + 35} - 9 \frac{\text{℥}}{\text{℥}}$

To subtract  $\frac{3}{4} \frac{N}{\text{℥}}$  out of  $\frac{7}{8} \frac{\text{℥}}{N}$  rests  $\frac{28 \text{ ℥} - 24}{32 \text{ ℥}}$

To subtract  $\frac{9}{3 \text{ ℥} + 4}$  out of  $\frac{12}{3 \text{ ℥} + 4}$  resteth  $\frac{3}{3 \text{ ℥} + 4}$

### Multiplication in Coslike broken numbers.

Multiply the numerators together, that which precedeth of them is the new numerator, then multiply also the denominators together, and the production is the denominator.

Multiply  $\frac{3}{4} \frac{N}{\text{℥}}$  by  $\frac{4}{5} \frac{\text{℥}}{N}$  they make  $\frac{12}{20} \frac{\text{℥}}{\text{℥}}$  or  $\frac{3}{5} \frac{\text{℥}}{\text{℥}}$  or  $\frac{3}{5} \frac{\text{℥}}{\text{℥}}$

Multiply  $\frac{2}{4} \frac{\text{℥}}{\text{℥}}$  which  $\frac{3}{4} \frac{\text{℥}}{\text{℥}}$  make  $\frac{6}{12} \frac{\text{℥}}{\text{℥}}$

Multiply  $\frac{4}{5} \frac{\text{℥}}{\text{℥}}$  by  $\frac{2}{3} \frac{\text{℥}}{\text{℥}}$  make  $\frac{8}{15} \frac{\text{℥}}{\text{℥}}$

Multiply  $\frac{5}{8} \frac{\text{℥}}{\text{℥}}$  by  $3 \frac{\text{℥}}{\text{℥}} - 4$  make  $\frac{15 \text{ ℥} - 20 \text{ ℥}}{8}$

℞

Multiply

## The Pathway to knowledge.

Multiply  $\frac{5\text{℥} + 3}{8\text{℥} - 1\text{℥}}$  by  $\frac{3\text{℥} - 5}{4\text{℥} + 2}$  they make

$$15\text{℥} - 16\text{℥} - 15$$

$$32\text{℥} - 4\text{℥} + 16\text{℥} - 2\text{℥}$$

## Diuision in Cosslike broken numbers.

**T**o deuide one broken number by the other, there is no other way then as before exprested, onely that you must make, how the quantities do change by the multiplication.

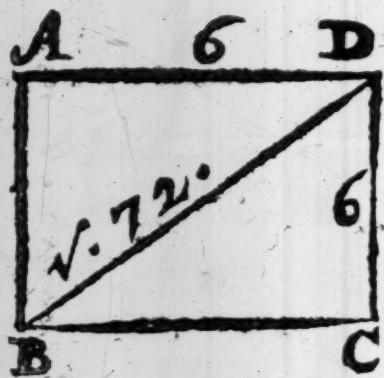
To deuide  $\frac{3}{4}\text{℥}$  by  $\frac{1}{2}\text{℥}$ , multiply crosse wise,  $3\text{℥}$  by  $2$ , it maketh  $6\text{℥}$ . Multiply  $4$  by  $1\text{℥}$ , it maketh  $4\text{℥}$ , which set vnder  $6\text{℥}$ , it is  $\frac{6\text{℥}}{4\text{℥}}$  or  $\frac{6\text{N}}{4\text{℥}}$  or  $\frac{1\frac{1}{2}}{1\text{℥}}$ .

$\frac{3}{4}\text{℥}$  deuided by  $\frac{7}{8}\text{℥}$  make  $\frac{24\text{℥}}{28\text{℥}}$  or  $\frac{24}{28\text{℥}}$  which is  $\frac{6}{7}\text{℥}$ .

$\frac{3}{4}\text{℥}$  deuided by  $\frac{2}{3}\text{℥}$  make  $\frac{9}{8}$  or  $1\frac{1}{8}$ .  $5\text{℥}$  deuided by  $\frac{1}{4}\text{℥}$  make  $\frac{25\text{℥}}{1\text{℥}}$  or  $\frac{25\text{℥}}{1\text{N}}$  which is  $25\text{℥}$ .

$\frac{3\text{℥} + 4}{1\text{℥}}$  deuided by  $\frac{3}{2\text{℥} + 4\text{℥}}$  make  $\frac{6\text{℥} + 10\text{℥} + 16\text{℥}}{3\text{℥}}$ .

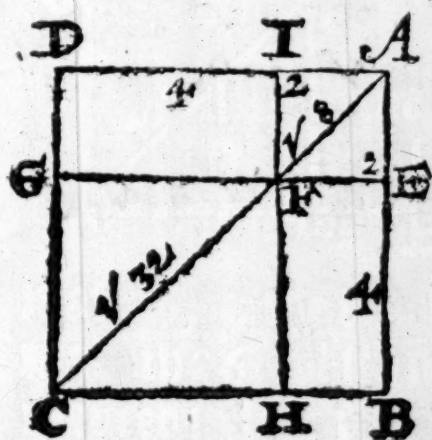
## The foure kinde of surd numbers.



**A** Surd number, is as much to say, as a number wherein it is not possible to take the roote, but there will alwaies rest some thing, as it appeareth in the margin, whereas there is a quadrant which on each side is 6 foote square, the diameter line, whereof being B, D, must then

## The Pathvay to knowvledge.

then make  $\sqrt{72}$ , out of the which no roote is to be taken, but there will rest some what, but the roote may be taken so narowly out of it, that there will no matter of any importance want to extract, as you may see in the last part of the extraction of rootes, and when you desire to ad 6 to  $\sqrt{72}$ , there will arise  $6 + \sqrt{72}$ , and when you will subtract 6 from  $\sqrt{72}$ , there will rest  $\sqrt{72} - 6$ , and when you will multiply or deuide them, there will a number rise out of them, named breuen, or breuifiable.



To adde  $\sqrt{8}$  to  $\sqrt{32}$ , which are two numbers called communicants, out of the which men cannot extract any  $\sqrt{\phantom{x}}$ , vnlesse the numbers be placed in lesse p<sup>ro</sup>portion, which is in these, by 2, and it maketh 4 and 16, out of the which extract the  $\sqrt{\phantom{x}}$ , resteth 2 and 4, which added together

make 6, for the whole side of A and B, which multiply in it selfe maketh 36, which multiply by 2, (whereby the numbers were reduced in lesse p<sup>ro</sup>portion) and it maketh 72, whereof the  $\sqrt{\phantom{x}}$  is  $\sqrt{72}$ , for this addition.

Also if a quazant be deuited by two lines right forth, there will p<sup>ro</sup>cede 4 superfities or spaces, and if that the two lines do crosse one ouer the other in the diametricall line of the quazant which is in F, then the two spaces A. E. F. I. and F. H. C. and G. must be both square. Therefore is it, that when you multiply one side of each quazant or square in it selfe, and so extract the  $\sqrt{\phantom{x}}$  out of the double of each of them, it shall make as much: as if you did multiply the greatest quazant A. B. in it selfe, and then extract the  $\sqrt{\phantom{x}}$  out of the double thereof, &c.

# The Pathway to knowledge.

## Otherwise

Divide 8 to 23, they make 40, and multiply 32 by 8 they make 256, which multiply againe by 4 it maketh 1024, out of which extract  $\sqrt{\quad}$  it maketh 32, which adde unto 40, they make 72, out of which extract  $\sqrt{\quad}$  there cometh  $\sqrt{72}$  as before. And to procure the same, by rationall or proportionable sums, make that the one summe were  $\sqrt{9}$ , and the other  $\sqrt{25}$ , which together make 8, for the  $\sqrt{\quad}$  of 9 is 3, and the  $\sqrt{\quad}$  of 25 is 5. and according unto the former rule, adde 9 and 25 together, they make 34, then multiply 9 and 25 together, they make 225, which multiply againe by 4, it maketh 900, whereof the  $\sqrt{\quad}$  is 30, which adde unto 34 it maketh 64, whereof the  $\sqrt{\quad}$ , is 8, as before &c.

Also to adde two unproportionable summes together, as  $\sqrt{6}$  and  $\sqrt{7}$ , they shall be  $\sqrt{6 + 7}$ .

Also to adde  $\sqrt{\text{L}81}$  to  $\sqrt{\text{L}192}$ , place each of them in a lesse proportion, as by 3 they will be  $\sqrt{\text{L}27}$ , and  $\sqrt{\text{L}64}$ , which together make 7, which multiply in themselves cubickwise, make 343, which againe multiply by 3, the number of the abreviation, it maketh 1029, whereof  $\sqrt{\text{L}}$  is the aggregate, of both the summes, and is  $\sqrt{\text{L}1029}$ . When  $\sqrt{\text{L}5}$  is added to  $\sqrt{\text{L}27}$  there shall rise  $3 + \sqrt{\text{L}5}$ . And when you adde  $\sqrt{\text{L}11}$  to  $\sqrt{\text{L}6}$ , they make  $\sqrt{\text{L}11 + 6}$ .

Also  $\sqrt{\text{L}32}$ , adde unto  $\sqrt{\text{L}162}$  doe thus.

Set each of them in a lesse proportion, which you may doe by 2, and it maketh 16, and 81. out of the which extract  $\sqrt{\text{L}}$ , there will be 2 and 3, which together make 5, which multiply in it selfe  $\text{L}$  make 625, and multiply that by 2 which is the number whereby the 2 summes were abreviated, it maketh 1250 out of the which extract  $\sqrt{\text{L}}$  it maketh  $\sqrt{\text{L}1540}$ , for your demaund, &c.

## Otherwise.

Divide  $\sqrt{\text{L}162}$ , by  $\sqrt{\text{L}32}$ , it shall make in lesse proportion,  $5\frac{1}{2}$  and 1, whereof the  $\sqrt{\text{L}}$  is  $1\frac{1}{2}$  and 1 which  
ad

## The Pathway to knowledge.

added together make  $2\frac{1}{2}$ , which multiply in it selfe Zenizzen-  
zicke wise, maketh  $39\frac{1}{2}$ , that multiply by 32 (whereby the  
numbers were both taken by,) it maketh 1250, out of the  
which extract  $\sqrt{8}$ , it is  $\sqrt{8}$  1250 for your demand.

Also to adde  $\sqrt{8}$  9, to  $\sqrt{64}$ , multiply the number 8 in  
it selfe cubicke wise, and the number 64 in it selfe quadrant  
wise, they make  $\sqrt{8}$  729, and  $\sqrt{64}$  4096, then decide  
the one summe by the other, it maketh  $5\frac{4}{5}$  out of the which  
extract  $\sqrt{8}$ , there will procede  $1\frac{1}{5}$  which adde unto 1, ma-  
keth  $2\frac{1}{5}$ , which multiply by 3 the extraction of the smallest sum,  
 $\sqrt{8}$ , there will be 7 for the whole aggregate of both the sums,  
which may very well be proued thus, for that both the sums are  
proportionable, that is the  $\sqrt{8}$  of 9 is 3, and the  $\sqrt{64}$  is  
4, which together make 7 as before.

Also to adde diuers kindes of numbers together, called uni-  
uersall, as  $\sqrt{8}$  27 —  $8\sqrt{2}$  —  $2\sqrt{8}$  is  $\sqrt{8}$  48 —  $18\sqrt{2}$  —  $8\sqrt{8}$ ,  
and like quantittes together like as you doe in Card numbers,  
and they make  $\sqrt{8}$  147 —  $50\sqrt{2}$  —  $18\sqrt{8}$ .

Also to adde  $\sqrt{2\frac{1}{2}}$  to  $\sqrt{10\frac{1}{2}}$  or  $\sqrt{\frac{8}{3}}$  or  $\sqrt{\frac{32}{3}}$ , then adde the nu-  
merators together, and they make  $\sqrt{8}$  and  $\sqrt{32}$  and they  
make  $\sqrt{72}$  vnder the which set 3, and the nominator shall be  
 $\frac{7}{3}$ , or  $\sqrt{24}$ , if you add  $\sqrt{10\frac{1}{2}}$  with  $\sqrt{24}$  or  $\sqrt{\frac{8}{3}}$ , there will  
be  $\sqrt{20\frac{2}{3}}$ , or  $\sqrt{66\frac{2}{3}}$  for the demand.

## Substraction, or extraction of Surd numbers

To subtract  $\sqrt{9}$ , out of  $\sqrt{64}$ , adde both the summes toge-  
ther, they make 73, then multiply 9 and 64, they make 576  
which multiply by 4, it maketh 2304, whereof the  $\sqrt{}$  is 48,  
which subtract out of 73, there resteth 25, whereof the  $\sqrt{}$  is 5,  
for the rest, which is easily proued because both the summes are  
proportionable, that is the  $\sqrt{}$  of 9 is 3, and the  $\sqrt{}$  of 64 is 8,  
now 3 taken out of 8, resteth 5, as before.

Also to subtract  $\sqrt{8}$  out of  $\sqrt{72}$  doe as before is taught,  
there will rest  $\sqrt{32}$ .

Also to subtract  $\sqrt{8}$ , out of  $\sqrt{72}$  geometricall, then take  
the aforesaid figures from the addition, as you are taught, that  
if you adde  $\sqrt{8}$  to  $\sqrt{32}$ , there cometh  $\sqrt{72}$ , and so if you sub-

## The Pathway to knowvledge?

Subtract the same  $\sqrt{8}$  out of  $\sqrt{72}$ , there will rest  $\sqrt{32}$ , take therefore the halfe of 8, and 72. they make 4 and 36, wherof the  $\sqrt{}$  is 2, and 6, which subtract one out of the other, there resteth yet 4, which multiply in it selfe it maketh 16, and that multiplied by 2. (whereby they were reduced into smaller summes,) it maketh 32, wherof the rote is  $\sqrt{32}$  as before.

Also to subtract  $\sqrt{6}$  out of  $\sqrt{7}$  there resteth  $\sqrt{7} - \sqrt{6}$ . Also to subtract  $\sqrt{81}$  out of  $\sqrt{1029}$ , set the first each summe in lesse proportion by 3, and they make  $\sqrt{27}$ , and  $\sqrt{343}$ , wherof the  $\sqrt{}$  is 3 and 7, then subtract 3 from 7, there resteth 4, that multiply in it selfe cubicke wise, it maketh 64, which multiply againe by 3 (the summe whereby the numbers were abated,) there will be  $\sqrt{192}$ , for the rest of these subtractions. If you subtract  $\sqrt{5}$  out of  $\sqrt{27}$ , there will rest  $3 - \sqrt{5}$ , and when you subtract  $\sqrt{6}$  out of  $\sqrt{11}$ , there will rem  $\sqrt{11} - \sqrt{6}$ . Also to subtract  $\sqrt{32}$  out of  $\sqrt{1250}$ , then set the summes in lesse proportion by 2 and they shall make  $\sqrt{16}$ , and  $\sqrt{625}$  wherof  $\sqrt{32}$ , being taken out, there will be 2, and 5, then subtract 2 out of 5, there resteth 3, which multiply in it selfe Zenizenzicke wise, it maketh 81, which multiply by 2, (the summe wherby the numbers were reduced in to smaller proportions) it will be 162, out of the which subtract  $\sqrt{32}$ , it shall be  $\sqrt{162}$ , for the rest of this subtraction. Also to subtract diuers kinds of summes  $\sqrt{27} - 8\sqrt{2} - 2\sqrt{3}$ , out of  $\sqrt{147} - 50\sqrt{2} - 18\sqrt{3}$  take like quantities one out of the other, as in the surd numbers, and adde vnto that which remaineth, the signe or token of the greatest quantitie in your question, and it shall make  $\sqrt{48} - 18\sqrt{2} - 8\sqrt{3}$  &c.

Also to subtract the  $\sqrt{2\frac{1}{2}}$  of  $\sqrt{24}$  or  $\sqrt{\frac{2}{3}}$  out of  $\sqrt{\frac{7}{3}}$  subtract  $\sqrt{8}$  out of  $\sqrt{72}$ , there resteth  $\sqrt{32}$ , vnder the which set 3, and the nominator is  $\sqrt{\frac{1}{3}}$ , or  $\sqrt{10\frac{2}{3}}$  for the rest. When you subtract  $\sqrt{10\frac{2}{3}}$  of  $66\frac{2}{3}$ , or  $\sqrt{1\frac{2}{3}}$  out of  $20\frac{2}{3}$ , there will rest  $\sqrt{1\frac{2}{3}}$  or  $\sqrt{24}$ . Also  $\sqrt{8\frac{1}{4}}$  out of  $\sqrt{13\frac{1}{4}}$ , there resteth  $\sqrt{13\frac{1}{4}}$ ,  $\sqrt{8\frac{1}{4}}$ .

Multipli-

## The Pathway to knowledge.

### Multiplication in Surd numbers.

**T**O multiply  $\sqrt{9}$ , with  $\sqrt{64}$ , it maketh  $\sqrt{576}$ , which is 24, also  $\sqrt{8}$ , multiplide with  $\sqrt{32}$ , make  $\sqrt{256}$ , that is 16. Also  $\sqrt{6}$ , multiplied with  $\sqrt{7}$ , make  $\sqrt{42}$ . Likewise  $\sqrt{5}$ , multiplied with 7, you must bring the 7, into the surdish number, with this signe  $\sqrt{\phantom{x}}$ , thus  $\sqrt{49}$ , then say  $\sqrt{5}$  times  $\sqrt{49}$ , make  $\sqrt{245}$ . Also to multiply 5 with  $\sqrt{\text{C}3}$ , bring first the 5, into the same signe  $\sqrt{\text{C}}$ , thus  $\sqrt{\text{C}125}$ , then multiply  $\sqrt{\text{C}125}$ , by  $\sqrt{\text{C}3}$ , it maketh  $\sqrt{\text{C}375}$ . Also  $\sqrt{\text{S}5}$ , multiplied with  $\sqrt{\text{S}7}$ , maketh  $\sqrt{\text{S}35}$ . If you multiply 3, with  $\sqrt{\text{S}8}$ , it maketh  $\sqrt{\text{S}648}$ . Also  $\sqrt{9}$ , multiplied with  $\sqrt{\text{C}27}$ , first you must multiply 9, in it selfe cubick wise, and it maketh  $\sqrt{\text{S}729}$ , then you must multiply the  $\sqrt{\text{C}27}$ , in it selfe quadrant wise, it maketh  $\sqrt{\text{S}729}$ , then multiply the 2 numbers together they make 531441 whereof the  $\sqrt{\text{S}729}$ , is 9, the roote of this multiplication. When you will multiply summes of divers qualities, as  $\sqrt{\text{S}26} - 4\frac{1}{2}\sqrt{\text{C}} - \frac{1}{4}\sqrt{\text{S}}$ , by 2, then set the 2 first vnder the signe  $\sqrt{\phantom{x}}$ , it maketh  $\sqrt{4}$ , by the which multiply all the three numbers they make  $\sqrt{\text{S}104} - 19\sqrt{\text{C}} - 1\sqrt{\text{S}}$ . Also to multiply  $\sqrt{4}$ , with  $\sqrt{6\frac{1}{4}}$ , it maketh  $\sqrt{25}$ , or 5. Also  $\sqrt{6\frac{1}{2}}$  multiplied with  $\sqrt{3\frac{1}{2}}$ , make  $\sqrt{21}$ . Likewise  $\sqrt{\text{S}2}$ , multiplied with  $\sqrt{\text{S}6}$ , make  $\sqrt{\text{S}14}$ .

### Diuision in Surd numbers.

**T**O deuide  $\sqrt{576}$ , by 9, it maketh  $\sqrt{64}$ , or 8, and  $\sqrt{256}$ , deuided by  $\sqrt{8}$ , they make  $\sqrt{32}$ .

Also  $\sqrt{42}$ , deuided by  $\sqrt{6}$ , maketh  $\sqrt{7}$ .

Likewise  $\sqrt{245}$ , deuided by 7, you must first bring the 7, into the same denomination  $\sqrt{\phantom{x}}$ , as thus,  $\sqrt{49}$  and then deuide the  $\sqrt{245}$ , by  $\sqrt{49}$ , it maketh  $\sqrt{\frac{5}{7}}$ , or  $\sqrt{\frac{5}{7}}$ .

To deuide  $\sqrt{\text{S}35}$ , by  $\sqrt{\text{S}5}$ , it maketh  $\sqrt{\text{S}7}$ , as you will deuide 9, by  $\sqrt{\text{C}27}$ , bring the 9, into the same denomination,  $\sqrt{\text{C}}$ , thus,  $\sqrt{\text{C}729}$ , which deuide by  $\sqrt{\text{C}27}$ , it maketh  $\sqrt{\text{C}27}$ , or 3. Also  $\sqrt{81}$ , deuided by  $\sqrt{\text{C}27}$ .

You

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You must first multiply the 81 in it selfe & abike wise, and the  $\sqrt{27}$ , in it selfe quadrant wise, & it maketh  $\sqrt{8}$  & 531441, and  $\sqrt{8}$  & 729, then divide the one quantitie by the other, it maketh  $\sqrt{8}$  & 729, which is asmuch as 3 act.

Also to divide universall of diverse kindes of summes, as  $\sqrt{104} - 19$  &  $-1$  &  $\sqrt{3}$ , by 2, bring the 2 first under the figure of  $\sqrt{}$ , thus  $\sqrt{4}$ , and divide the 3 summes by  $\sqrt{4}$ , and they make  $V. \sqrt{26} - 4 \frac{1}{2}$  &  $-\frac{1}{2}$  &  $\sqrt{3}$ . Likewise  $\sqrt{21}$  divided by  $\sqrt{6}$  maketh  $\sqrt{3}$ , and  $\sqrt{8}$  & 14 divided by  $\sqrt{8}$  & 2, maketh  $\sqrt{8}$  & 6.

## Addition in Binomicall and residuall numbers.

**B**inomicall is called a number of two names, which bringeth with it the signe +, as  $4 + \sqrt{8}$ , whereof his residuall number is  $4 - \sqrt{8}$ . Now to add  $4 + \sqrt{8}$ , with  $5 + \sqrt{32}$ : Add 4 and 5 together, and they make 9: then add  $\sqrt{8}$  with  $\sqrt{32}$  together, in like manner as in the sord numbers, and they make  $\sqrt{72}$ , which add unto 9, it maketh  $9 + \sqrt{72}$  for your demand.

$5 + \sqrt{8}$	$3 + \sqrt{3}$	$14 - \sqrt{3}$	$\sqrt{50} - 4$
$6 + \sqrt{18}$	$7 + \sqrt{27}$	$12 - \sqrt{12}$	$\sqrt{18} - 6$
<hr style="width: 100%;"/>		<hr style="width: 100%;"/>	<hr style="width: 100%;"/>
$11 + \sqrt{50}$	$10 + \sqrt{48}$	$25 - \sqrt{27}$	$\sqrt{128} - 10$

$8 - \sqrt{27}$	$4 + \sqrt{50}$	$\sqrt{50} + \sqrt{7}$
$11 + \sqrt{3}$	$3 - \sqrt{8}$	$\sqrt{72} - \sqrt{7}$
<hr style="width: 100%;"/>	<hr style="width: 100%;"/>	<hr style="width: 100%;"/>
$19 - \sqrt{12}$	$7 + \sqrt{18}$	$\sqrt{242} -$

$\sqrt{128} - 6$	$7 + \sqrt{8}$	$8 - \sqrt{3}$
$8 - \sqrt{72}$	$5 + \sqrt{3}$	$6 - \sqrt{5}$
<hr style="width: 100%;"/>	<hr style="width: 100%;"/>	<hr style="width: 100%;"/>
$2 + \sqrt{8}$	$12 + \sqrt{84} + \sqrt{3}$	$14 - \sqrt{2} - \sqrt{5}$

Also to add  $V \sqrt{7} + \sqrt{5}$ , to  $V \sqrt{175} + \sqrt{3125}$ , add  $\sqrt{7}$  an  $\sqrt{175}$  together, as in the sord numbers, and they make  $\sqrt{252}$ , then add also  $\sqrt{3125}$ , to  $\sqrt{5}$ , and they make 3130.  
Then

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Then multiply them together they make 15625, which multiplied by 4, they make 62500, whereof the  $\sqrt{\phantom{x}}$  is 250, which adde unto the 3130, maketh 3380. whereof the  $\sqrt{\phantom{x}}$  is  $\sqrt{3380}$ , which keepe by it selfe, then multiply the  $\sqrt{3125}$  by  $\sqrt{5}$ , it maketh 15625, which multiplied by 16, maketh 250000, whereof the  $\sqrt{\phantom{x}}$  is 500, whereof the  $\sqrt{\phantom{x}}$  is  $\sqrt{500}$ , which adde unto the aforesaid 3380 as in the surnumbers, it maketh  $\sqrt{6480}$ , which adde unto the aforesayd  $\sqrt{252}$ , it maketh  $\sqrt{252} + \sqrt{6480}$  for that addition.

### Substraction in bynomish and residuall numbers.

TO subtract 9 from  $6 + \sqrt{13}$  it maketh restting  $\sqrt{13} - 3\sqrt{5}$  subtracted from  $7 + \sqrt{3}$  resteth  $7 + \sqrt{3} - \sqrt{5}$ , also  $\sqrt{5}$  out of  $\sqrt{45} - \sqrt{6}$  resteth  $\sqrt{20} - \sqrt{6}$ , also 6 out of  $\sqrt{8} + \sqrt{3}$  there resteth  $\sqrt{8} + \sqrt{3} - 6$ , also  $\sqrt{2}$  out of  $\sqrt{18} + 5$ , there resteth  $\sqrt{8} + 5$ , also  $\sqrt{50}$  out of  $24 - \sqrt{8}$ , resteth  $24 - \sqrt{98}$ ,  $\sqrt{3}$  out of  $16 - \sqrt{10}$ , resteth  $16 - \sqrt{10} - \sqrt{3}$ ,  $3 + \sqrt{6}$  out of 6, resteth  $3 - \sqrt{6}$ ,  $8 - \sqrt{8}$  out of  $\sqrt{18}$ , resteth  $\sqrt{50} - 8$ ,  $5 - \sqrt{7}$  out of 9, resteth  $4 + \sqrt{7}$ ,  $\sqrt{5} - \sqrt{2}$  out of  $\sqrt{18}$ , resteth  $\sqrt{32} - \sqrt{5}$ ,  $\sqrt{38} - 6$  out of  $\sqrt{38} + 6$  resteth 12.

$$\begin{array}{r} 6 + \sqrt{20} \\ 3 + \sqrt{5} \\ \hline 3 + \sqrt{5} \end{array}$$

$$\begin{array}{r} \sqrt{18} - 1 \\ 1 + \sqrt{2} \\ \hline \sqrt{8} - 2 \end{array}$$

$$\begin{array}{r} \sqrt{128} + \sqrt{50} \\ \sqrt{8} + \sqrt{2} \\ \hline \sqrt{72} + \sqrt{2} \end{array}$$

$$\begin{array}{r} \sqrt{27} + 5 \\ 2 + \sqrt{3} \\ \hline \sqrt{12} + 2 \end{array}$$

$$\begin{array}{r} \sqrt{75} - 1 \\ \sqrt{27} + 2 \\ \hline \sqrt{12} - 3 \end{array}$$

$$\begin{array}{r} 16 - \sqrt{72} \\ 7 - \sqrt{32} \\ \hline 9 - \sqrt{8} \end{array}$$

$$\begin{array}{r} 17 - \sqrt{2} \\ 5 + \sqrt{72} \\ \hline \sqrt{12} + 98 \end{array}$$

$$\begin{array}{r} \sqrt{72} + 8 \\ \sqrt{2} - 1 \\ \hline \sqrt{50} + 9 \end{array}$$

$$\begin{array}{r} \sqrt{50} + \sqrt{32} \\ \sqrt{18} + \sqrt{18} \\ \hline \sqrt{18} \end{array}$$

$$\begin{array}{r} 19 - \sqrt{5} \\ 6 + \sqrt{7} \\ \hline 13 - \sqrt{7} - \sqrt{5} \end{array}$$

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To subtract, V as  $\sqrt{7} + \sqrt{5}$ , out of  $V \sqrt{252} + \sqrt{648}$ , subtract  $\sqrt{7}$ , out of  $\sqrt{252}$ , as in the surd numbers, there resteth  $\sqrt{175}$ , then subtract  $\sqrt{5}$  out of  $\sqrt{648}$ , and then add them together they make 6485, then multiplie them together they make 32400, which multiplied by 4 maketh 129600, whereof the  $\sqrt{}$  is 360, which add vnto the 6485—it maketh 6845, whereof the  $\sqrt{}$  is  $\sqrt{6845}$ , for this addition of 6480, with 5, which set apart, then multiplie  $\sqrt{6480}$ , with  $\sqrt{5}$ , it maketh 32400, and then by 16, it maketh 518400, wherof the  $\sqrt{}$  is 720, the  $\sqrt{}$  thereof is  $\sqrt{720}$ , which subtract from 6845, as in the surd numbers there resteth  $\sqrt{3125}$ , which ad to  $\sqrt{175}$ , there will be  $V \sqrt{175} + \sqrt{3125}$ , the rest of this subtraction.

## Multiplication in bynomish and residuall numbers.

When you multiply + with + or — with — there will arise + & when you multiplie + with — or — with + there will arise —, now to multiplie  $4 + \sqrt{7}$  by 3, first multiplie 3 and 4, it maketh 12, then bring the 3 into the number of  $\sqrt{}$  as thus  $\sqrt{9}$  which multiplie by  $\sqrt{7}$ , it maketh  $\sqrt{63}$ , which add to 12, it maketh  $12 + \sqrt{63}$ , for your demaunde,  $4 - \sqrt{3}$  multiplied by 2, maketh  $8 - \sqrt{12}$ ,  $\sqrt{7} + 2$ , multiplied by 4 maketh  $8 + \sqrt{112}$ ,  $\sqrt{8}$  multiplied by  $\sqrt{2} + \sqrt{6}$ , maketh  $4 + \sqrt{48}$ ,  $\sqrt{8} + \sqrt{5}$ , multiplied by 2, maketh  $\sqrt{32} + \sqrt{20}$ , 6 multiplied by  $\sqrt{7} - 2$  maketh  $\sqrt{252} - 12$ .

$$\begin{array}{r}
 5 + \sqrt{8} \\
 5 + \sqrt{8} \\
 \hline
 25 + \sqrt{200} \\
 8 + \sqrt{200} \\
 \hline
 33 + \sqrt{800}
 \end{array}$$

$$\begin{array}{r}
 5 - \sqrt{8} \\
 7 - \sqrt{2} \\
 \hline
 35 - \sqrt{392} \\
 4 - \sqrt{50} \\
 \hline
 39 - \sqrt{722}
 \end{array}$$

$$\begin{array}{r}
 \sqrt{32} - 3 \\
 \sqrt{8} + 3 \\
 \hline
 \sqrt{256} - \sqrt{72} \\
 + \sqrt{128} - 6 \\
 \hline
 \sqrt{8} + 10
 \end{array}$$

$$6 + \sqrt{3}$$

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$\begin{array}{r} 6 + \sqrt{3} \\ 6 - \sqrt{3} \\ \hline 36 \\ 3 \\ \hline 33 \end{array}$	$\begin{array}{r} \sqrt{9} + \sqrt{16} \\ \sqrt{9} + \sqrt{16} \\ \hline 9 + \sqrt{144} \\ 16 + \sqrt{144} \\ \hline 49 \end{array}$	$\begin{array}{r} \sqrt{5} + \sqrt{2} \\ \sqrt{7} + \sqrt{8} \\ \hline \sqrt{35} + \sqrt{14} \\ + \sqrt{40} + 4 \\ \hline 4 + \sqrt{35} + \sqrt{14} + \sqrt{40} \end{array}$
--	--	--

To multiply vniuersall or diuers kindes of sommes, as  $\sqrt{7} + \sqrt{36}$ , quadzant wise in themselves, take away onlpe the first signe  $\sqrt{\phantom{x}}$  and it will be  $7 + \sqrt{36}$  or 13 for your demaund.

Likewise to multiply  $V\sqrt{\sqrt{64}-4}$  with  $\sqrt{16}-2$ , then multiplie  $\sqrt{16}-2$  in it selfe, it maketh  $V\sqrt{20}-\sqrt{256}$ , then multiply  $V\sqrt{20}$  with  $V\sqrt{64}-4$  it maketh  $V\sqrt{\sqrt{25600}-80}$  then multiplie  $\sqrt{256}$  with  $V\sqrt{\sqrt{64}-4}$ , it will make  $V\sqrt{\sqrt{4096}-\sqrt{16384}}$ , then add  $V\sqrt{\sqrt{25600}}$  to  $V\sqrt{\sqrt{4096}-\sqrt{16384}}$  it maketh  $V\sqrt{\sqrt{50176}}$ , then add also  $-80$  to  $\sqrt{16384}$  it maketh  $\sqrt{43264}$ , which subtract out of  $V\sqrt{\sqrt{50176}}$  it maketh  $V\sqrt{\sqrt{50176}-\sqrt{43264}}$ , then Subtract  $\sqrt{43264}$  out of  $\sqrt{50176}$ , there resteth yet  $V\sqrt{\sqrt{256}}$ , or 4 for this multiplication, which is easily pzooued because the numbers are proportionable, as  $V\sqrt{\sqrt{64}-4}$ , that is 2; and  $\sqrt{16}-2$ , that is also 2, multiply then 2, with 2, they make 4, as before.

## Diuision in bynomicall and residuall numbers,

**T**O deuyde  $12 + \sqrt{63}$ , by 3, first deuide 12 by 3 it maketh 4 then bring the 3 vnder the signe  $\sqrt{\phantom{x}}$  as  $\sqrt{9}$ , and deuyde  $\sqrt{63}$ , by  $\sqrt{9}$  it maketh  $\sqrt{7}$  which add to 4, it maketh  $4 + \sqrt{7}$ .

To deuide  $8 - \sqrt{12}$  by 2, it maketh  $4 + \sqrt{7}$ , to deuyde  $4 + \sqrt{48}$  by 8, it maketh  $\sqrt{2} + \sqrt{6}$ , to deuyde  $\sqrt{32} + \sqrt{20}$  by 2 it maketh  $\sqrt{8} + \sqrt{5}$ , to deuyde  $\sqrt{21} - \sqrt{3}$ , by  $\sqrt{3}$  it maketh  $\sqrt{7} - \sqrt{1}$  or  $\sqrt{7}-1$ .

To deuide  $7$  by  $3 + \sqrt{5}$ , then take the residuall of  $3 + \sqrt{5}$ , which is  $3 - \sqrt{5}$ , and multiplie the same by his bynomicall number which is  $3 + \sqrt{5}$ , and it maketh 4, for the deuisor, then multiply 7 by the residuall of the deuisor which is  $3 - \sqrt{5}$ ,

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and it maketh  $21 - \sqrt{245}$ , which deuyde by 4, it maketh  $5\frac{1}{4} - \sqrt{15\frac{5}{8}}$  for the question. To deuyde  $33 + \sqrt{800}$  by  $5 + \sqrt{8}$  multiplie the  $5 + \sqrt{8}$  by his residuall it maketh 17 for the deuifor, then multiplie  $33 + \sqrt{800}$  by  $5 + \sqrt{8}$  the residuall of the deuifor it shall make  $85 + \sqrt{2312}$  whiche deuide by 17, maketh  $5 + \sqrt{8}$  for your demaund.

To deuide  $39 - \sqrt{722}$  by  $5 - \sqrt{8}$  then multiply  $5 - \sqrt{8}$ , by his binomicall, as by  $5 - \sqrt{8}$ , it maketh 17, for the deuifor, then multiply the  $39 - \sqrt{722}$ , also by  $5 + \sqrt{8}$ , (the binomicall of the deuifor) it maketh  $119 - \sqrt{578}$ , which deuide by 17 it maketh  $7 - \sqrt{2}$  for your demaund, or do only set the deuifor  $39 - \sqrt{722}$ , for vnder the somme that shalbe deuided it maketh  $5 - \sqrt{8}$ . also to deuide  $\sqrt{7}$  by  $\sqrt{8} - \sqrt{6}$ , then multiplie the deuifor by his bynomicall, as by  $\sqrt{8} + \sqrt{6}$ , it maketh 2 for the deuifor, then multiplie the  $\sqrt{7}$ , by  $\sqrt{8} + \sqrt{6}$ , (the bynomicall of the deuifors) it maketh  $\sqrt{56} + \sqrt{42}$ , which deuided by 2 it maketh  $\sqrt{14} + \sqrt{10}\frac{1}{2}$  for the demaund.

To deuyde  $\sqrt{12}$  by  $3 - \sqrt{7}$  multiplie the  $3 - \sqrt{7}$ , by his binomicall, it maketh 2, for the deuifor, then multiply also  $\sqrt{12}$  by  $3 + \sqrt{7}$ , the bynomicall of the deuifor it maketh  $\sqrt{108} + \sqrt{84}$ , which deuide by 2 it maketh  $\sqrt{27} + \sqrt{21}$ , also  $16 - \sqrt{27}$  deuided by  $4 + \sqrt{3}$ , it maketh  $5\frac{1}{4} - \sqrt{13\frac{5}{8}}$ , also to deuide  $30$  by  $V\sqrt{30} - \sqrt{25}$ , multiply the deuifor by his bynomicall as by  $V\sqrt{30} + \sqrt{25}$ , it maketh  $\sqrt{875}$ , for y deuifor then multiply the somme that is to be deuided, also by  $V\sqrt{30} + \sqrt{25}$  it maketh  $V\sqrt{27000} + \sqrt{20250000}$  which deuided by  $\sqrt{875}$  it maketh  $V\sqrt{27000} + 20250000$

$$\sqrt{875}$$

Or  $V\sqrt{30\frac{6}{7}} + \sqrt{26\frac{22}{44}}$  whiche is  $\sqrt{36}$  or 6, which is easie to be prooued because that the numbers are rationall or proportionable, for  $V\sqrt{30} - \sqrt{25}$ , is 5 for the deuifor and the somme deuided will be 30 therefore the quotient is 6. Also 30 deuided by  $V\sqrt{30} + \sqrt{25}$ , multiplie the deuifor by his residuall it is  $\sqrt{875}$  for the deuifor, then multiply also 30 which is to bee deuyded by the residuall of the deuifor, as by  $V\sqrt{30} - \sqrt{25}$ , it maketh  $V\sqrt{27000} - \sqrt{20250000}$ , which deuide by the deuifor, that is by  $\sqrt{875}$ , it maketh  $V\sqrt{30\frac{6}{7}} - \sqrt{26}$

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$\sqrt{26 \frac{22}{4}}$  for the demaund, which is  $\sqrt{25 \frac{1}{7}}$ .

To extract the square roote out of by-  
nomicall and residuall numbers.

**T**o extract the square roote out of  $33 + \sqrt{800}$ , multiplie the 33 in it selfe it maketh 1089, out of the which substract the square number of the same which is  $\sqrt{800}$ , and there will remaine yet 289, whereof the  $\sqrt{\phantom{x}}$  is 17, that add to the 33, it maketh 50, the halfe whereof is 25, the  $\sqrt{\phantom{x}}$  whereof is 5, for the first part of the roote required, then substract 25 out of 33, there resteth yet 8, whereof the  $\sqrt{\phantom{x}}$  is  $\sqrt{8}$ , for the other part of the roote required, and the whole roote shalbe  $5 + \sqrt{8}$ .

Otherwise,

Take the halfe of  $33 + \sqrt{800}$ , which is  $16 \frac{1}{2} + \sqrt{200}$ , and multiplie each part in it selfe it maketh  $272 \frac{1}{4}$  and 200, then substract 200, out of  $272 \frac{1}{4}$  resteth  $72 \frac{1}{4}$  whereof the  $\sqrt{\phantom{x}}$  is  $8 \frac{1}{2}$  or  $8 \frac{1}{2}$  which add vnto  $16 \frac{1}{2}$  it maketh 25, whereof the  $\sqrt{\phantom{x}}$  is 5, for the one somme, then substract  $8 \frac{1}{2}$  out of  $16 \frac{1}{2}$  there resteth 8, whereof the  $\sqrt{\phantom{x}}$  is  $\sqrt{8}$ , for the second number, as before which is  $5 + \sqrt{8}$ . To extract the square roote out of  $21 - \sqrt{320}$  doe as before you were taught, and add the same signe that this number hath vnto it, and it shalbe  $4 - \sqrt{5}$ .

Also to extract  $\sqrt{8}$  out of  $\sqrt{24} + \sqrt{18}$ , take the halfe of each somme it maketh  $\sqrt{6} + \sqrt{4 \frac{1}{2}}$  then multiplie each somme in it selfe it maketh  $6$  &  $4 \frac{1}{2}$ , then substract  $4 \frac{1}{2}$  out of 6, it resteth  $1 \frac{1}{2}$  whereof the  $\sqrt{\phantom{x}}$  is  $\sqrt{1 \frac{1}{2}}$  which add vnto  $\sqrt{6}$ , it maketh  $\sqrt{13 \frac{1}{2}}$  whereof the  $\sqrt{\phantom{x}}$  is  $\sqrt{88}$ ,  $13 \frac{1}{2}$  for the first part of the quotient, then substract  $\sqrt{1 \frac{1}{2}}$  out of  $\sqrt{6}$ , and there resteth  $\sqrt{1 \frac{1}{2}}$ , whereof the  $\sqrt{\phantom{x}}$  is  $\sqrt{88}$   $1 \frac{1}{2}$  for the second part of the quotient & will make in all  $\sqrt{88} 13 \frac{1}{2} + \sqrt{88} 1 \frac{1}{2}$  for the demaund.

To extract the  $\sqrt{8}$  out of  $\sqrt{294} - 12$ , multiplie the halfe of each part by it selfe it maketh  $73 \frac{1}{2}$  and 36, then take 36 out of  $73 \frac{1}{2}$  resteth yet  $37 \frac{1}{2}$  whereof  $\sqrt{\phantom{x}}$  is  $\sqrt{37 \frac{1}{2}}$  which ad to  $73 \frac{1}{2}$  it maketh  $\sqrt{216}$  whereof the  $\sqrt{\phantom{x}}$  is,  $\sqrt{88} 216$ , for the first part, then substract also  $\sqrt{37 \frac{1}{2}}$  out of  $\sqrt{73 \frac{1}{2}}$  resteth  $\sqrt{6}$ , whereof also the  $\sqrt{\phantom{x}}$  is,  $\sqrt{88} 6$ , for the second part, and the

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quotient will be in all,  $\sqrt{88} \ 216 - \sqrt{88} \ 6$ .

### Equation or the rule of algeber the first part.

**V**When two quantities are alike, of the which one of their naturall signes are not expresse, then deuide the lesse by the great, and out of the production subtract the  $\sqrt{8}$  and that which shall remaine is,  $1 \ \mathcal{E}$ , as if  $5 \ \mathcal{E} \ 8$  were like vnto  $4 \ 5 \ 8$  the  $5 \ \mathcal{E}$  shalbe like  $45 \ \mathcal{E}$ , and the  $5 \ 8$  like  $45 \ N$ , deuide each one by  $5$ , it maketh  $1 \ 8$  like vnto  $9 \ N$ . extract the  $\sqrt{}$  out of each somme, it maketh  $1 \ \mathcal{E}$ , like vnto  $3$ .

Also as 2 quantities be alike between the which, 2 of their naturall signes are not expresse, then deuide the smalett by the greatest and take the  $\sqrt{\mathcal{E}}$ , out of the production, & that which commeth of them shalbe the value of  $1 \ \mathcal{E}$ , as if  $4 \ 8 \ \mathcal{E}$  were like vnto  $256$ , & the  $4 \ 8$  must then be like vnto  $256 \ 8$ , and  $4 \ 8 \ 8$ , like vnto  $256 \ \mathcal{E}$  and  $4 \ \mathcal{E}$ , like vnto  $256 \ N$ , deuide each of them by  $4$ , it maketh  $1 \ \mathcal{E}$ , like to  $64$ , extract the  $\sqrt{\mathcal{E}}$  out of each of them, there will be  $1 \ \mathcal{E}$ , as  $4$ , and when there are 3 quantities not in their naturall places, then you must extract the  $\sqrt{88}$ , and as there are 4 quantities changed in their naturall order, then you must extract  $\sqrt{8}$ , & so forth to the rest.

### The second Equation or algebers rule.

**V**When 3 quantities are in naturall places, and that the 2 greatest are like the smalett, then deuide the 2 least, by the greatest, & then multiplie the halfe of the middlemost quantitie in it selfe, and add to the production the smalett quantitie, and out of that production, extract  $\sqrt{}$  and out of that take the halfe of the myddlemost quantitie, and that which resteth is the worth of a  $\mathcal{E}$ .

Example.

If  $6 \ 8 \ 8 + 9 \ \mathcal{E}$  be like  $132 \ 8$  the  $6 \ \mathcal{E} + 9 \ 8$ , shalbe like  $132 \ \mathcal{E}$  and the  $6 \ 8 - 9 \ \mathcal{E}$ , like  $132 \ N$ , and  $1 \ 8 + 1 \frac{1}{2} \ \mathcal{E}$  like

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22, now multiplye the halfe of  $1 \frac{1}{2}$  which is the middlemost quantity in it selfe it take,  $\frac{1}{2}$  therunto ad 22 it maketh 22  $\frac{1}{2}$  whereof the  $\sqrt{\phantom{x}}$  is  $4 \frac{3}{4}$  out of the which maketh  $\frac{3}{4}$  which is the halfe of the middlemost quantitie, there will rest 4 for the value of a  $\mathcal{E}$ .

### The third Equation or rule of algeber.

**V**hen there are 3 quantities in their naturall order placed, and that the greatest & the smallest are like the middlemost, then deuide the middlemost and the smallest by the greatest, and then multiplie the halfe of the middlemost quantity by it selfe, and out of that production, take the smallest quantitie, and out of the rest take the  $\sqrt{\phantom{x}}$ , and to the production of this extraction, add the halfe of the middlemost quantitie, or take it out of the halfe of the middlemost quantitie as you shall see occasion, and the remainder shalbe the value of 1  $\mathcal{E}$ .

#### Example.

If  $5 \mathcal{Z} \mathcal{Z} + 160 \mathcal{Z}$  be like  $60 \mathcal{E}$  the  $5 \mathcal{E} + 160 \mathcal{E}$ , must be like  $60 \mathcal{Z}$  and the  $5 \mathcal{Z} + 160$ , N, like  $60 \mathcal{E}$ , and  $1 \mathcal{Z} + 32$ , like  $12 \mathcal{E}$ , multiplie the halfe of the middlemost quantitie in it selfe, it maketh 36, out of the which take 32, there resteth 4, whereof the  $\sqrt{\phantom{x}}$  is 2, which add to 6, the halfe of the middlemost quantitie, there will be 8, for the value of 1  $\mathcal{E}$ , or when you take out 2 from 6, there resteth 4, and so there are 2 sommes founde out as 8 or 4 for the value of 1  $\mathcal{E}$ .

### The fourth Equation or rule of algeber.

**V**hen there are three quantities in naturall order so that the 2 smallest are like the greatest, then deuide all the 3 quantities, by the greatest, then multiplie the halfe of the middlemost quantitie in it selfe, and to the production, add the smallest quantitie, and out of that production take the  $\sqrt{\phantom{x}}$  and to the quotient of this extraction, add the halfe of the middlemost quantitie, and the rest will be the value of a  $\mathcal{E}$ .

#### Example,

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### Example.

If  $5\sqrt{z}$  be like  $50\sqrt{e} + 280\sqrt{z}$  the  $5\sqrt{e}$  must be like  $50\sqrt{z} + 280\sqrt{e}$ , and  $5\sqrt{z}$  must be like  $50\sqrt{e} + 280\sqrt{z}$ , and  $1\sqrt{z}$ , like  $10\sqrt{e} + 56$ , multiplie the halfe of the middlemost quantitie in it selfe, it maketh  $25$ , which add vnto  $56$ , it maketh  $81$ , whereof the  $\sqrt{\phantom{x}}$  is  $9$ , therunto ad  $25$  which is the halfe of the middlemost quantity there will be  $14$  for the value of a  $\sqrt{e}$ .

If  $1\sqrt{z}$  be like  $48 - 8\sqrt{e}$ , then extract out of each of them the  $\sqrt{\phantom{x}}$  & it maketh  $1\sqrt{e}$  like  $4$  but to extract the  $\sqrt{\phantom{x}}$  out of  $48 - 8\sqrt{e}$ , multiplie the halfe of the number of the rootes in it selfe it maketh  $16$ , and then looke whether the somme be  $+$  or  $-$  for if you multiplie  $-$  by  $-$  or  $+$  by  $+$ , there will be  $+$ , and when you multiplie  $+$  by  $-$  or  $-$  by  $+$  there will be  $-$  and because that in this extraction the signe is  $-$  the production of the multiplication is  $+$   $16$ , which add vnto the  $48$  it maketh  $64$ , whereof the  $\sqrt{\phantom{x}}$  is  $8$ , out of the which extract the halfe of the middlemost quantitie because the signe  $-$  is found to be here, there will rest  $4$  for the value of a  $\sqrt{e}$ .

And if the signe by the  $\sqrt{e}$  be  $+$  then you must add the halfe of the middlemost quantitie, vnto the  $8$ , then there will be  $12$ , for the value of a roote.

And when you will extract the  $\sqrt{\phantom{x}}$  of  $16\sqrt{e} - 48$ , then multiplie the halfe of  $16$  in it selfe, it maketh  $64$ , out of the which take  $48$  because the signe  $-$  is found to be heere, there will rest  $16$ , whereof the  $\sqrt{\phantom{x}}$  is  $4$ , and because the signe  $-$  is lost by meanes of the subtraction, therefore you may add  $4$  vnto the halfe of the middlemost quantitie, or take it out of the middlemost quantitie, and the rest shalbe the value of one  $\sqrt{e}$ .

If  $1\sqrt{e} + 4\sqrt{z}$  be like  $4352\sqrt{e}$  the  $1\sqrt{z} + 4\sqrt{e}$  shalbe like  $4352\sqrt{z}$ , and the  $16\sqrt{z} + 4\sqrt{e}$  like  $4352\sqrt{e}$ , and  $1\sqrt{e} + 4\sqrt{e}$  shalbe like  $4352\sqrt{z}$ , multiplie  $2$  the halfe of the middlemost quantitie in it selfe, it maketh  $4$  which add vnto  $4352$ , it maketh  $4356$ , whereof the  $\sqrt{\phantom{x}}$  is  $66$ , out of the which take  $2$  the halfe of the middlemost quantitie there resteth.

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64, for the value of 1  $\mathcal{C}$ , then extract out of each the  $\sqrt{\mathcal{C}}$ , there will be one  $\mathcal{E}$  like 4.

Also if 1  $\mathcal{Z}$   $\mathcal{Z}$   $\mathcal{Z}$  + 3  $\mathcal{Z}$   $\mathcal{Z}$ , be like 66304, doe as before is said, there will be 256, for the value of one  $\mathcal{Z}$   $\mathcal{Z}$ , extract out of each, the  $\sqrt{\mathcal{Z}$   $\mathcal{Z}}$  there will be 1  $\mathcal{E}$  like 4.

If 9  $\mathcal{Z}$  + 24  $\mathcal{E}$  + 20 be like 173, how much is a roote, answer, take out of each part 4, there resteth yet 9  $\mathcal{Z}$  + 24  $\mathcal{E}$  16, like 169, then take out of each part the  $\sqrt{\mathcal{E}}$ , that is of 169 there will be 13, and out of 9  $\mathcal{Z}$  + 24,  $\mathcal{E}$  + 16; in this maner seeke the  $\sqrt{\mathcal{Z}}$  of 9  $\mathcal{Z}$  which is, 3  $\mathcal{E}$  that set in the quotient, then double the 3  $\mathcal{E}$  they make 6  $\mathcal{E}$ , and say how many times 6  $\mathcal{E}$  are in 24  $\mathcal{E}$ , in such manner that when the number of the production is multiplied quadzant wise in it selfe, men may take it absolutely out of the number, and it is 4, then the quotient of this example will be 3  $\mathcal{E}$  + 4 like 13, and 1  $\mathcal{E}$  shalbe 3.

$$\begin{array}{r} 9\mathcal{Z} + 24\mathcal{E} - 16 \\ 6\mathcal{E} - 4 \end{array}$$

Or if you take 20 out of each part, there resteth yet 9  $\mathcal{Z}$  + 24  $\mathcal{E}$  like unto 153, or 1  $\mathcal{Z}$  + 2  $\mathcal{Z}$   $\mathcal{E}$  like 17, and by the seconde equation one  $\mathcal{E}$  shalbe 3 as before, but when you will take  $\sqrt{\mathcal{Z}}$  out of 9  $\mathcal{Z}$  - 24  $\mathcal{E}$  + 16, then doe as you are taught before, only in the place of + you must set the signe of —

Also if 1  $\mathcal{C}$  + 12  $\mathcal{Z}$  + 48  $\mathcal{E}$  + 64, were like 216, how much shall one  $\mathcal{E}$  be, take the  $\sqrt{\mathcal{C}}$  out of each part, that is out of 216 it will be 6, & out of 1  $\mathcal{C}$  + 12  $\mathcal{Z}$  + 48  $\mathcal{E}$  + 64 in this maner, seeke the  $\sqrt{\mathcal{C}}$  out of 1  $\mathcal{C}$ , which is 1  $\mathcal{E}$ , that place in the quotient, then multiplie 1  $\mathcal{E}$ , & the quadzant of 1  $\mathcal{E}$  (as 1  $\mathcal{Z}$ ) with the genitures, 3 & 3, it will make 3  $\mathcal{E}$ , 3  $\mathcal{Z}$ , then say how many times 3  $\mathcal{Z}$ , in 12  $\mathcal{Z}$  it maketh 4 times, the second number in the quotient, then multiplie the 4 in it selfe, quadzant wise, it maketh 16, that multiply by 3  $\mathcal{E}$ , it will make 48  $\mathcal{E}$ , which take out of 48 there resteth 0, then multiplie also the 4, in the quotient cubicke wise in it selfe, it will make 64, which take out of 64, resteth 0, and then this extraction will bee 1  $\mathcal{E}$  + 4 like 6, and 1  $\mathcal{E}$ , shalbe like 2.

$\mathcal{C}$

1 $\mathcal{C}$  + 12

## The pathway to knowledge.

$$1\mathcal{C} + 12\mathcal{Z} + 48\mathcal{E} + 64(1\mathcal{E} + 4$$

$$12\mathcal{Z} + 48\mathcal{E} + 64$$

$$1\mathcal{E}$$

$$1\mathcal{Z}$$

$$3$$

$$3$$

genitures

$$3\mathcal{E}$$

$$3\mathcal{Z}$$

$$64$$

$$16$$

$$4$$

$$64$$

$$+ 48\mathcal{E}$$

$$12\mathcal{Z}$$

Also if  $1\mathcal{C}$  be like  $38\frac{1}{2}\mathcal{E} - 90$  howe much shall one  $\mathcal{E}$  be, take out of each part 64, there will rest  $1\mathcal{C} + 03 + 0\mathcal{E} - 64$ , like  $38\frac{1}{2}\mathcal{E} - 154$  then deuide each of them in  $1\mathcal{E} - 4$ , as followeth.

$$+ 4\mathcal{Z} + 16\mathcal{E}$$

$$1\mathcal{C} + 03 + 0\mathcal{E} - 64(1\mathcal{Z} + 4\mathcal{E} + 16$$

$$2\mathcal{E} - 4$$

$$1\mathcal{E} - 4$$

$$1\mathcal{C} 4, 38\frac{1}{2}\mathcal{E} - 184(38\frac{1}{2}$$

$$1\mathcal{E} - 4$$

**I**t maketh that on the one side will be  $1\mathcal{Z} + 4\mathcal{E} + 16$ , and on the other side  $38\frac{1}{2}$  therefore these 2 numbers are againe like, and  $1\mathcal{Z} + 4\mathcal{E}$  shall also be like  $22\frac{1}{2}$  and by the 2 equation one roote shalbe  $\sqrt{26\frac{1}{2}} - 2$ .

Prooffe.

$1\mathcal{E}$  is found to be  $\sqrt{26\frac{1}{2}} - 2$  which multiplie quadrant wise in it selfe, is  $30\frac{1}{2} - \sqrt{424}$ , for  $1\mathcal{Z}$ , which multiplie againe by  $\sqrt{26\frac{1}{2}} - 2$  will make  $\sqrt{39279\frac{1}{8}} - 167$ , for  $1\mathcal{C}$ , and before it was made  $1\mathcal{C}$  like vnto  $38\frac{1}{2}\mathcal{E} - 90$ , and  $1\mathcal{E}$ , is here found to be  $\sqrt{26\frac{1}{2}} - 2$  so the  $38\frac{1}{2}\mathcal{E}$  make  $\sqrt{39279\frac{1}{8}} - 77$ , and the  $38\frac{1}{2}\mathcal{E} - 90$  must then bee  $\sqrt{39279\frac{1}{8}} - 167$ , which is also as much as before  $1\mathcal{C}$  is found to bee, which I desired to prooue, although that by an other waye a man maye find the value of a  $\mathcal{E}$  to be 4, for if  $1\mathcal{E}$  bee 4, then one  $\mathcal{C}$  must be 64, and  $38\frac{1}{2}\mathcal{E} - 90$  set against 4, for the  $1\mathcal{E}$  accounted maketh 64.

Reduction

## The path way to knowledge.

### Reduction of the rule of algeber, or equation.

**T**he better to vnderstand reduction of algeber, or equation: you must vnderstand, that as 2 things are like, and that you put as much to the one part as to the other, the 2 productions will also bee alike, also if you take as much from the one as from the other, the two rest will also be alike, also if you multiply the one part by as much as you doe the other, both the productions will also be alike: also when two things are alike, & that the one is deuided by as much as the other, then both the quotients will be alike, also if you multiply each part in it selfe quadzant or cubicke wise, their productions will be alike, also if you extract  $\sqrt{\quad}$  or  $\sqrt[3]{\quad}$  out of each part the quotients will be alike.

#### Example.

$3^{\circ}\mathcal{E} - 8$  is like  $13$ , add vnto each part 8, there will be  $3^{\circ}\mathcal{E}$ , like 21, then deuide each part by 3, it will make  $1^{\circ}\mathcal{E}$  like 7.

$4^{\circ}\mathcal{E} - 8$  is like  $2^{\circ}\mathcal{E}$ , add vnto each part 8, there will bee  $4^{\circ}\mathcal{E}$  like  $2^{\circ}\mathcal{E} + 8$ , then subtract out of each part,  $2^{\circ}\mathcal{E}$ , there resteth yet  $2^{\circ}\mathcal{E}$  like 8, then deuide each by 2 it will be  $1^{\circ}\mathcal{E}$ , like 4,  $5^{\circ}\mathcal{E} + 12$  are like  $3^{\circ}\mathcal{E} + 16$ , subtract out of each part 12, there resteth yet  $5^{\circ}\mathcal{E}$ , like  $3^{\circ}\mathcal{E} + 4$ , subtract yet out of each part  $3^{\circ}\mathcal{E}$  resteth  $2^{\circ}\mathcal{E}$  like 4 and  $1^{\circ}\mathcal{E}$  shalbe 2.

If  $6^{\circ}\mathcal{E} + 9$ , are like  $9^{\circ}\mathcal{E} - 6$ , the  $6^{\circ}\mathcal{E} + 15$  shalbee like  $9^{\circ}\mathcal{E}$ , and the  $3^{\circ}\mathcal{E}$ , shalbe like 15, and  $1^{\circ}\mathcal{E}$  shall make 5.

If  $8^{\circ}\mathcal{E} - 10$  be like  $22 + 4^{\circ}\mathcal{E}$ , add vnto each part 10, there will be  $8^{\circ}\mathcal{E}$  like  $32 + 4^{\circ}\mathcal{E}$ , then subtract out of each part  $4^{\circ}\mathcal{E}$ , there resteth yet  $4^{\circ}\mathcal{E}$  like 32, then one roote shalbe like 8.

If  $12^{\circ}\mathcal{E} - 4$  be like  $28 - 4^{\circ}\mathcal{E}$ , add vnto each part  $4^{\circ}\mathcal{E}$ , it maketh 16,  $^{\circ}\mathcal{E} - 4$  like 28, then add moze vnto each part 4, there will be  $16^{\circ}\mathcal{E}$  like vnto 32 and  $1^{\circ}\mathcal{E}$  like 2.

Also  $3 - ^{\circ}\mathcal{E}$  is like  $\sqrt{18^{\circ}\mathcal{E}}$  multiplie each quadzant wise in it selfe, it maketh  $9^{\circ}\mathcal{Z}$  like  $18^{\circ}\mathcal{E}$ , &  $1^{\circ}\mathcal{Z}$  is then like  $2^{\circ}\mathcal{E}$ , and  $1^{\circ}\mathcal{E}$  shalbe like 2 N.

If  $3^{\circ}\mathcal{E} - 6$ , be like  $\sqrt[3]{24^{\circ}\mathcal{E}}$  then multiplie each part in

## The pathway to knowledge.

it selfe quadzant wise it maketh  $9\sqrt{x} - 36\sqrt{x} + 36$  like unto  $24\sqrt{x}$ , then add unto each part  $36\sqrt{x}$ , there will be  $9\sqrt{x} + 36$  like  $60\sqrt{x}$ , then deuide all the sommes by 9 they make  $1\sqrt{x} + 4$ , like  $6\frac{2}{3}\sqrt{x}$ , and according vnto the 3 equation  $1\sqrt{x}$  shalbe  $60\frac{2}{3}$  as reason of the rule requireth.

If  $\frac{1}{5}\sqrt{x}$  be like  $\frac{240}{15\sqrt{x} + 15}$  multiplie crosse wise the  $15\sqrt{x} + 15$ , with 16, and 5 by 240 there will be  $240\sqrt{x} + 240$ , like 1200, then substract out of each part 240, there will remaine  $240\sqrt{x}$ , like 960, then deuide each side by 240, there will bee  $1\sqrt{x}$  like 4.

If  $\frac{180}{3\sqrt{x} + 4}$  be like  $\frac{45}{1\sqrt{x}}$  multiplie crosse wise  $3\sqrt{x} + 4$  with 45, & 180 by  $1\sqrt{x}$  they make  $180\sqrt{x}$  like  $135\sqrt{x} + 180$ , of  $45\sqrt{x}$ , like 180 and  $1\sqrt{x}$ , shalbe like 4.

Also  $\frac{24\sqrt{x} + 48}{6\sqrt{x} + 6}$  are like  $\frac{8\sqrt{x} - 9}{4\sqrt{x} - 8}$  multiplie crosse wise, the  $24\sqrt{x} + 48$  by  $4\sqrt{x} - 8$ , & the  $8\sqrt{x} - 9$  by  $6\sqrt{x} + 6$  it will be  $96\sqrt{x} - 384$ , like  $48\sqrt{x} + 24\sqrt{x} - 240$  or  $96\sqrt{x} - 360$  like  $48\sqrt{x} + 24\sqrt{x}$ , of  $48\sqrt{x}$  like  $24\sqrt{x} + 360$ , of  $1\sqrt{x}$  like  $\frac{1}{2}\sqrt{x} + 7\frac{1}{2}$  and  $1\sqrt{x}$ , shal be like 3 by the fourth equation.

If  $1\sqrt{x} + 3$  be like  $\sqrt{x}$  of  $14 + \sqrt{180}$ . then multiply each part in it selfe quadzant wise, it maketh  $1\sqrt{x} + 6\sqrt{x} + 9$ , like  $14 + \sqrt{180}$ , of  $1\sqrt{x} + 6\sqrt{x}$ , like  $5 + \sqrt{180}$ . multiply the half of  $6\sqrt{x}$ , (which is the middlemost quantitie) in it selfe, it maketh 9 (without the signe  $\sqrt{x}$ ) which adde vnto  $5 + \sqrt{180}$ , it maketh  $14 + \sqrt{180}$ , wherof  $\sqrt{x}$  shal be  $3 + \sqrt{5}$ , out of the which take the halfe of the middlemost quantitie, which is 3, there will yet rest  $\sqrt{5}$ , for the valew of  $1\sqrt{x}$ .

## Heere beginneth certaine examples of the first equation.

**A** Gentleman hath a seruant to whome he promiseth 24 shillings yearely wages, and a cloake at the end of 8. months, they fall at variance, in such sort that the gentleman putteth a way.

## The pathway to knowledge.

May his man, and the man receiveth for his wages 13 shillings and the cloake, the question is, at what price the cloake is rated: Say, if 8 moneths gaine a cloake + 13 s. what shall 12 months gaine facit 1 s  $\frac{1}{2}$  the cloake and 19 s  $\frac{1}{2}$  money, which are like 1 the cloake, + 24 s, take out of each part 19 s  $\frac{1}{2}$  there resteth 1  $\frac{1}{2}$  the cloake, and 1 the cloake + 4 s  $\frac{1}{2}$  money, then take out of each of those parts 1 for the cloake, there rests yet  $\frac{1}{2}$  for the cloake, as likewise 4  $\frac{1}{2}$  then the cloake shall be 9 s. and so much the cloake was valued at.

A Gentleman hunteth a hare in the field, and he findeth by their tracing in the snow, that the hare had 60. lengths of the hounds passes before the houndes, and as often as the hare runneth 8 passes, the hound runneth but 6 passes, but two hounds passes are as much as 3 hares passes, the question is in how many passes the hound shall overtake the hare.

23

3 Hares paces.

If 6 houndes paces be — 8 hares paces, what 2 houndes paces facit 2  $\frac{2}{3}$  hares paces.

If 3 hares paces be 2 houndes paces, what is  $\frac{2}{3}$  hares paces facit  $\frac{2}{3}$   $\frac{2}{3}$  houndes paces.

Then say if  $\frac{2}{3}$  paces be gotten by 2 houndes paces, how much shalbe gotten by 60 paces, facit  $1 \text{ } \mathcal{E} - \frac{2}{3} - 2 - 60 - 1 \text{ } \mathcal{E}$  facit  $\frac{2}{3}$   $\mathcal{E}$  like 120, and 1  $\mathcal{E}$  is like 540 paces of a hound, wherein he overtaketh the hare.

Otherwise.

Say if 2 houndes paces make 3 hares paces, what shall 60 houndes paces make, it maketh 90 hares paces, then say if 2 houndes paces be 3 hares paces what are 6 houndes paces, facit 9 hares paces, out of the which take 8, there resteth one, then saye if 1 hares pace be gotten by 6 houndes paces, in how many houndes paces will the 90 hares paces be gotten facit 540 houndes paces.

A gentlewoman hunteth a hare, and as often as the dog runneth 6 paces, the hare runneth 8, and 2 paces of the dog, make 3, paces of the hare, and the dogg overtaketh the hare in 540 paces.

## The pathway to knowledge.

ces of his owne, howe many paces had the hare before the dog, facit 60 hares paces.

If 6 dogs paces be 8 hares paces, what is 2 dogs paces, facit  $2\frac{2}{3}$  hares paces.

If 3 hares paces, 2 dogs paces,  $\frac{1}{3}$  hares paces facit  $\frac{1}{3}$  dogs paces  $0\frac{1}{3}$ .

Then say if  $\frac{2}{3}$  of a pace be gotten by 2 dogs paces, how much shall 1  $\mathcal{E}$  of paces get, which they haue had before the dog, facit 9  $\mathcal{E}$  like vnto 540 dogs paces, and 1  $\mathcal{E}$  is like 60 dogs paces, that the hare had before the dogs.

There is a barrell full of water, which hath thre pipes, in such manner that if the first pipe be opened, all the water runneth out in 4 houres, if the second pipe be opened, it runneth out in 3 houres, and if the 3 pipe be opened it runneth out in 2 houres, the question is, if all the 3 pipes bee let runne at once, in what time the vessell will be emptie facit  $\frac{12}{11}$ , say the barrell runneth all out in 1  $\mathcal{E}$  of howers, then say at the first pipe it runneth out in 4 howers, howe much shall runne out in 1  $\mathcal{E}$  of howers, facit  $\frac{1}{4}$   $\mathcal{E}$ , then say if in 3 howers the water voydeth what in 1  $\mathcal{E}$  hower facit  $\frac{1}{3}$   $\mathcal{E}$ , then say if 2 howers the water runneth out, what in 1  $\mathcal{E}$  facit  $\frac{1}{2}$   $\mathcal{E}$ , then ad  $\frac{1}{4}$   $\mathcal{E}$   $\frac{1}{3}$   $\mathcal{E}$ , &  $\frac{1}{2}$   $\mathcal{E}$  they make  $\frac{11}{12}$   $\mathcal{E}$ , that it runneth out all together, & 1  $\mathcal{E}$  is like  $\frac{12}{11}$  howers, and in that time it runneth all out.

Also there are 4 milles, whereof the first grindeth 4 quarters in 3 howers, the second 5 quarters in 4 howers, the 3 quarters in 5 howers, and the fourth 7 quarters in 6 howers the question is in what time they shall grind 30 quarters altogether facit 1  $\mathcal{E}$  howers.

If	3	4	1 $\mathcal{E}$ facit 1 $\frac{1}{3}$ $\mathcal{E}$ ,
	4	5	1 $\mathcal{E}$ facit 1 $\frac{1}{4}$ $\mathcal{E}$ ,
	5	6	1 $\mathcal{E}$ facit 1 $\frac{1}{5}$ $\mathcal{E}$ ,
	6	7	1 $\mathcal{E}$ facit 1 $\frac{1}{6}$ $\mathcal{E}$ ,

4  $\frac{12}{10}$

like

## The pathway to knowledge.

like vnto 30, and 1 ℥ shall then be like  $6\frac{2}{3}$  howers in which time they 4 milles shall grinde 30 quarters of wheate.

Also a lyon, a wolfe, and a fox, haue altogether taken a hart, which the lyon himselfe woulde eate vp in 3 howers, the wolfe would eate it vp alone in 4 howers, and the fox could eate it vp alone in 5 howers, but they agreed together that the lyen shall begin to eate  $\frac{1}{2}$  hower before the rest, but the fox giueth y<sup>e</sup> wolfe no aduantage, the question is in what time the hart shalbe deuoured of these thre beasts altogether.

If 3 howers eate the hart, what shall  $\frac{1}{2}$  hower facit  $\frac{1}{2}$  part of the hart shalbe eaten by the lion before the rest begin, then there resteth  $\frac{5}{2}$  parts of the hart to eate, whereof they begin all thre to eate, make that they eate it vp all thre in 1 ℥ howers say,

3	howers,	1	hart	what	1 ℥,	facit	$\frac{1}{3}$ ℥,
4		1			1 ℥	facit	$\frac{1}{4}$ ℥,
5		1			1 ℥	facit	$\frac{1}{5}$ ℥,
							<u><math>\frac{47}{60}</math></u>

like vnto  $\frac{5}{2}$  and 1 ℥, is like  $\frac{3}{47}$  whereunto add  $\frac{1}{2}$  hower, for the lyons eating alone, it will be  $1\frac{53}{94}$  parts of an hower in all.

A gentleman agreeth with a shepheard to keepe and feede him 80 sheepe for a yeere at a certaine price, and at 3 moneths end, the gentleman deliuereth 30 sheepe more, and 4 moneths after that 3 moneths he giueth him 30 sheepe more, saying vnto him, kepe me all these sheepe so long vntil such time as that you shall haue earned the money that I haue promised you at the first, the question is howe long time hee must keepe those 140 sheepe, say that he kept the first 80, 1 ℥ of moneths, and the 30 that he putteth to them 1 ℥ — 3, and the last 30, hee keepeth 1 ℥ — 7 moneth, then doe as followeth.

80	1 ℥	80 ℥,	the	mo,
30	1 ℥ — 3	30 ℥ — 90	80	12 — 960,
30	1 ℥ — 7	30 ℥ — 210		
		<u>140 ℥ — 300</u>		

which is like 960, and 1 ℥ like 9 moneths, the time that hee must

## The pathway to knowledge.

must keepe the first 80 sheepe, and for the 30 he first receiued, he must keepe them 6 moneths, and for the last 30, hee must keepe them 2 moneths.

Thre marchants hyer a wagon for 45 £, vpon condition that if any man more sitteth vp in the wagon, the halfe of that mans hier shalbe for them, & the other halfe for the wagon man, it fell out so y there sat 4 men more in the wagon, & one man paid as much as the other, the question is how much ech man must pay, the first thre must pay 45 £, now there sat 4 more whereof the halfe was theirs, therfore take the halfe of 4, it maketh 2, which ad to 3, it maketh 5, and then say, if 5 men pay 45 £, what shal one man paye facit 9 £, so much doe each man paye for his wagon hier.

A man maketh his will, and leaueth 3 sonnes and 4 daughters, with their mother, hee willet that after his death. (his goods which were esteemed at 9800 £) they should deuide so among them that one daughter should haue thre times as much as the mother, and a sonne 4 times as much as a daughter, the question is what each of them shall haue for his part, say that the mother taketh 1 £ pounds, then the 4 daughters must haue 12 £ pounds, that is each daughter 3 £ pounds, then a sonne must take 4 times as much as a daughter, that is for each son 12 £ pounds, which is for the 3 sonnes 36 £ pounds, then ad together the 1 £, 12 £, & 36 £, they make 49 £, like 9800 pounds; and 1 £ is like 200 £, the mothers money, then the 4 daughters must haue 2400 £, that is each of them 600 £, and the 3 sonnes must haue 7200 £, that is each sonne 2400 £.

A marchant hath laden 2 shippes with wine, in the one is 20 tonnes, and in the other 30 tonnes, and comming to a custome house he payeth for the one shipp a tunne of wines, and he receiueh back againe 60 £, and for the second ship he payeth also a tonne of wine custome, and they giue him againe 15 £, the question is how deere a tonne of wine is accounted, and howe much he paid for the custome of a tunne of wine in money, say that the tonne was worth 1 £ pounds, and say if 20 tonns pay custome 1 £ — 60 £, what shall 30 tonnes pay facit, 3 £ — 180 like 1 £ — 15, and 1 £ shalbe like 150 £, so deere

was

## The pathway to knowledge.

was a tonne of wine accounted, then say 2 tonne deliuered for custome cost 300 £, wherof the customer hath deliuered againe 75 £, there resteth then 225 £, for the value of the custome, of the 50 tonnes of wine, then each fat must pay for custome 4 £  $\frac{1}{2}$ .

If from Amsterdam to Danske there are to goe the right way 162  $\frac{1}{2}$  miles, nowe there are 2 postes vpon a day that departed the one for Amsterdam from Danske, and the other for Danske from Amsterdam, & he that goeth from Amsterdam to Danske, goeth euery day 8 miles, & he that goeth from Danske to Amsterdam goeth dayly 7 miles, the question is in what time they shall meet one the other.

miles.

1 — 7 ——— 1 £ facit 7 £, like 162  $\frac{1}{2}$  miles, and 1 £  
 1 — 8 ——— 1 £ facit 8 £, shalbe like 10  $\frac{4}{9}$  daies, that  
 15 £, they shal meete one the other.

Two townes are distant one from the other 162  $\frac{1}{2}$  miles, & from ech of them there is a post y departeth from the one towne vnto the other, and the one post goeth euerie day a mile moze then the other, and in 10  $\frac{4}{9}$  dayes, they meete, the question is how many miles they goe each of them a day.

If 1 day 1 £, what 10  $\frac{4}{9}$  daies facit 10  $\frac{4}{9}$  £

If 1 day 1 £ + 1 what 10  $\frac{4}{9}$  daies facit 10  $\frac{4}{9}$  £ + 10  $\frac{4}{9}$  £  
 21  $\frac{1}{9}$  £ — 10  $\frac{4}{9}$  £

like 162  $\frac{1}{2}$  miles, and 1 £ is like 7 miles for the one post, and 8 miles for the other post that they goe dayly.

A post set from Amsterdam to Danske, and at the same time the marchant to whome the letters which the post caried were directed, taketh horse in Danske to ride to Amsterdam, & they meete together on the way. There the marchant receiueth his letters, & asketh the post how much he must haue, the post sayeth that he had gon one day as much as the other, and I would haue made my iourney in 20 days, for the which my hier should haue been 30 £, with such condition that if you chanced to meete me on the way, that the way that you haue ridden should be cut of frō my wages, the marchant answereth, that he had ridden euery day alike, & I would haue been at my iourneis end in 16 dayes, the question is how much the marchant must pay the post.

## The pathway to knowledge.

If 16 dayes 1, what 1  $\frac{1}{2}$  dayes — facit  $\frac{1}{16}$   $\frac{1}{2}$ ,

If 20 dayes 1, what 1  $\frac{1}{2}$  dayes — facit  $\frac{1}{20}$   $\frac{1}{2}$ ,

Then say if 20 dayes, must 30  $\frac{1}{2}$  what 8  $\frac{1}{2}$   $\frac{2}{30}$ ,

facit 13  $\frac{1}{3}$ ,  $\frac{1}{3}$  the posts wages, which you demaund.

like vnto 1, for the whole way, and 1  $\frac{1}{2}$  shalbe like 8  $\frac{1}{2}$  dayes, so much had each gone of their wates.

Two men are hired to doe a peece of worke whereof one of them, sayth I will doe it alone in 16 dayes, y other sayth he wil doe it alone in 12 dayes, the question is in howe many dayes they could make it together.

If 16 1, what 1  $\frac{1}{2}$  facit  $\frac{1}{16}$   $\frac{1}{2}$ , | like 1 and 1  $\frac{1}{2}$  shalbe like

If 12 1, what 1  $\frac{1}{2}$  facit  $\frac{1}{12}$   $\frac{1}{2}$ , | 6  $\frac{6}{7}$  dayes, in which time

$\frac{7}{48}$  | they could make the peece

of worke together.

Two men haue a peece of worke in hand which they can doe in 6  $\frac{6}{7}$  dayes, whereof the one coulde haue done it alone in 16 dayes, the question is in how many dayes the other could haue made the same peece of worke alone.

If 16 dayes doe 1 work, what 6 dayes  $\frac{6}{7}$ , facit  $\frac{3}{7}$ , which take out of the whole work there resteth  $\frac{4}{7}$  for the worke for 6  $\frac{6}{7}$  days then say.

If  $\frac{4}{7}$  be 6 dayes  $\frac{6}{7}$  what 1 facit 12 dayes.

4 48.

A shippe sayleth out of the tassell, to spaine, with such a wind. that he might do his viage in 15 daies, but when 6 daies were past, the winde changed, and made the shippe to sayle as much backwards in 4 daies as it had done in 1 dayes before, and at the beginning of the second wind, there departed an other ship from spayne vnto the tassell, laden in such sort, that as often as the shippe comming from the tassell went backwards 2 miles, the other goeth 7 miles forwards to the tassell, the question is in how much time after the date of the first 6 dayes, and howe many miles from the tassell, the ships meete together, and in what time the shipp comming from Spayne would bee at the tassell, which places are accounted 300 leagues one from the other.

## The pathway to knowledge.

If 15 days 300 leagues, what 6 days facit 120 L. y the ship comming from the tassel had made towards Spayne, by the first wynd, which substract from 300 resteth 180 leagues, y the ship had yet to sayle, then say.

If 15 dayes 300 L, what  $\frac{1}{4}$  facit 5 leagues, that the ship with a contrayrie winde did sayle backwards euerie day.

Then say if 2 leagues backe be 7 leagues forward, what 5 leagues backe facit 17 leagues  $\frac{1}{2}$  y the second ship made euery day comming from Spayne for the tassel, nowe saye that the shippes meete together in 1  $\frac{1}{2}$  dayes, and say in one day the first ship goeth backwards 5 leagues, how many leagues shall 1  $\frac{1}{2}$  days make, facit 5  $\frac{1}{2}$  leagues to the which ad 180, that the ship had yet to sayle, when the winde changed, it shall make 5  $\frac{1}{2}$  + 180, say if 1 day 17 leagues  $\frac{1}{2}$ , what 2 1  $\frac{1}{2}$  days, facit 17  $\frac{1}{2}$   $\frac{1}{2}$ , like 5  $\frac{1}{2}$  + 180, and 1  $\frac{1}{2}$  is like 14  $\frac{2}{3}$  dayes, that the ships meete together, say then if 1 day 17 leagues  $\frac{1}{2}$  what 14 days  $\frac{2}{3}$  facit 252 leagues that the ship had sayled from spayne towards the tassel before they mett, which is 48 from the tassel, then say if 17  $\frac{1}{2}$  leagues 1 day, what 300 L. facit 17, days  $\frac{2}{3}$  that y Shipp sayleth from spayne before it commeth vnto the tassel.

A worme is in a well, of 24 foote deepe, and creepeth upwards euery day 5 foote  $\frac{1}{4}$  and in the night he crepeth downwards againe 4 foote  $\frac{2}{3}$ , the question is in how many daies the worme shall creepe out of the well, take 4  $\frac{2}{3}$  out of 5  $\frac{1}{4}$  resteth  $\frac{11}{12}$  footes, then say if  $\frac{11}{12}$  daies — 1 day — what 19  $\frac{2}{3}$  facit 21 days, & there wil rest 5, which are  $\frac{1}{2}$  footes, which rest yet, of the 19  $\frac{2}{3}$  foote which the worme in the 22 daies, both creepe, therefore add those  $\frac{1}{2}$  daies againe vnto 4  $\frac{1}{3}$ , that hee creepeth backwards, it maketh 4  $\frac{3}{4}$ , then say if 5 foote  $\frac{1}{4}$  which the worme creepeth dayly without going backwardes giue 1 day, what shall 4  $\frac{3}{4}$  foote doe, facit  $\frac{1}{2}$  dayes, which ad vnto 21 daies, it maketh 21  $\frac{1}{2}$  days, that the worme will be comming out of the well, & will be vpon the 22 day before night.

Otherwise.

## The pathway to knowledge.

$5\frac{1}{4}$   $4\frac{1}{3}$  Then multiplie y nominatozs together it maketh  
 $2\frac{1}{4}$   $1\frac{2}{3}$  12, which multiplie againe by 24 foote the depth  
 $63$   $52$  of the well, it will bee 288, out of the which  
 $52$  take 52, the rest wil be 236, which deuided

11 for the deuifoz) by 11 the deuifoz, the quotient will be  
 21 dayes resting 5, which add to 52, they make 57, which  
 deuide in 63, there will be  $\frac{57}{63}$  that is  $\frac{19}{21}$  parts of a day, which  
 add vnto 21 it maketh,  $21\frac{19}{21}$  as befoze.

Proofe.

Say that in one daye & a night the worme creepeth bywards  
 $\frac{1}{12}$  of a foote, how many foote shall he creepe in 21 dayes and 1  
 night, facit 19 foote  $\frac{1}{4}$  part of a foote, then say in 1 day, it cree-  
 peth by 5 foote  $\frac{1}{4}$ , how many foote shall he make in  $\frac{19}{21}$  part of a  
 day, facit  $4\frac{1}{4}$  which add vnto  $19\frac{1}{4}$  it maketh 24 foote that the  
 worme had to creepe.

There are 2 pipes of like length and hoopes, the one hath 10  
 hoopes, the other hath 15 hoopes, the question is, if y the first  
 pipe holdeth 3 aumes of wine, how much shall the second hold,  
 multiply 10 and 15 each of them in themfelues quadrant wise,  
 there wil be 100, and 225, then say if 100, hold 3 aumes, what  
 shall 225 — facit 6 aumes and 6 pottles accounting 128 pot-  
 tles to an aume of wine.

There are 3 pipes of a like length, and of like hoopes the first  
 holdeth 4, y second 12 aumes, y 3 hath 18 hoopes, & it holdeth  
 as much as both y other pipes, the questio is how many hoopes  
 the 2 first pipes had, you must make that the 3 hat holdeth 16  
 aumes, whereof the  $\sqrt{\phantom{x}}$  is 4, & the  $\sqrt{\phantom{x}}$  of the quantitie of the first  
 is 2, then say if 4 giue 18, what shall 2 facit 9 hoopes, so many  
 had the first pipe, then take out the roote, the quantitie of the  
 second pipe is  $\sqrt{12}$ , then say if 4 18, what  $\sqrt{12}$  facit  $\sqrt{243}$ ,  
 for the second pipe.

There are 2 pipes of one bzeadth but not of one length wher-  
 of the length of the one is 6 foote, and contayneth 5 aumes, and  
 the other is 4 foote, the question is what it holdeth, facit 1 aum-  
 ne, and  $61\frac{17}{27}$  pottles, multiplie 6 & 4 each in themfelues cu-  
 bicke wise they make 216, and 64, then say, if 216 bee 5 au-  
mes

## The pathway to knowledge.

mes what 64 facit as before.

There are 2 pipes of one length, wherof the quantitie of the one, is 4 aumes, & the other 9 aumes, & of these 2 pipes there is one made as great as may be, y<sup>e</sup> questiō is what that great pipe shall hould, facit 25 aumes, say according to Archimedes rule, if 11 giue 14, what shall 9 facit  $11 \frac{1}{11}$ , whereof the  $\sqrt{\quad}$  is  $\sqrt{11 \frac{1}{11}}$ , for the diameter of the greatest pipe, then say if 11 giue 14 what shall 4 facit 5 and  $\frac{1}{11}$  whereof the  $\sqrt{\quad}$  is  $\sqrt{5 \frac{1}{11}}$ , for the Diameter of the smallest pipe, ad both the Diameters together,  $\sqrt{11 \frac{1}{11}}$  and  $5 \frac{1}{11}$  they make  $\sqrt{31 \frac{9}{11}}$ , then say if  $5 \frac{1}{11}$  giue 4 what shall  $31 \frac{9}{11}$  it maketh 25 for the quantity of the great pipe, made of the 2 other pipes.

Oherwise,

Add 4 aumes & 9 aumes together they make 13, then multiply 4 ammes & 9 aumes they make 36 which multiply againe by 4 it maketh 144, whereof the  $\sqrt{\quad}$  is 12, which add vnto the 13, it maketh 25 aumes, and so much the last pipe shall hould.

A gentleman causeth a well to bee made of 12 foote depth, for the which he promiset to giue the workman 12 s, but when the workman had digged 8 foote deepe, he fell sicke, & desired to haue his money for his work, but because the digging of one foote deepe in the nether part of the well, is moze labour then digging the vpper part, the gentleman would not pay so much for the one foote digging, as for the other, that was to dig, but will alowe a peny moze vpon each foote lower digged, the 12 foote are iust 12 s, the question is how much the labozers hier shalbe for the 8 foot facit 7 s, 4 d, take the progressiō of 1 to 11, it maketh 66, which add to 12 ℥, it maketh 12 ℥ + 66, like vnto 240 d, or 12 s, it maketh that 1 ℥ is like 14 d,  $\frac{1}{2}$  for the first foote, which multiplie by 8, it maketh 116 d, then againe take y<sup>e</sup> progressiō of 1 to 7, which is 28 d y<sup>e</sup> same ad vnto 116 d, it wil make 144 stivers or 7 s, 4 d, for the wagis of the labozer.

A gentleman hath hired one to dig a well, 12 foote deepe, for 12 gilderns, but when the workman had digged 8 foote, the maister and hee fall at variance, so that hee desireth to haue his money, the question is what he must haue, take the progression of 1 to 12 it maketh 78, then from 1 to 8, it maketh 36, & say

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if 78 cost 12, what shall 36 cost facit 5 gilderns, 10 stivers  
12 d,  $\frac{4}{3}$  for the labozers hier, for 8 foote.

A marchant deliue reth vpon interest 500 l, and at the end of 2 yeares, he receaueth againe for his interest vpon interest and his principall, in all 605 l, the question is what interest he had the first yeere, say he had the first yere for principall & interest, 1 £ pounds, now loke what proportion 500 l hath with 1 £, the like hath 1 £, w<sup>th</sup> 605 l, & 500 l, must be 1 £, as 605 l, the multiply 500 l, by 605 l, it maketh 302500 like 1 £, which is y<sup>e</sup> quadrant of y<sup>e</sup> middlemost number £, & 1 £ shalbe like 550 l, for the principall & interest of the first yeare, so that there was 50 l, gaind for y<sup>e</sup> first yere, so that y<sup>e</sup> interest was 10, per Cent.

A marchant deliuereth vpon interest 500 l, and at the end of 3 yerres, he receiued againe for principall & interest vpon interest 665 l,  $\frac{1}{2}$ , y<sup>e</sup> questiō is how much interest he had y<sup>e</sup> first yere, multiplie the 665  $\frac{1}{2}$  with 500 l, it maketh 332750, which multiplie once againe by 500 l, it maketh 166375000 out of the which take the  $\sqrt{\text{£}}$ , it maketh 550 l, for principall & interest the first yeere, out of the which substract 500 l, there resteth yet 50 l, gaynd, therefore the interest was 10 l, per Cent.

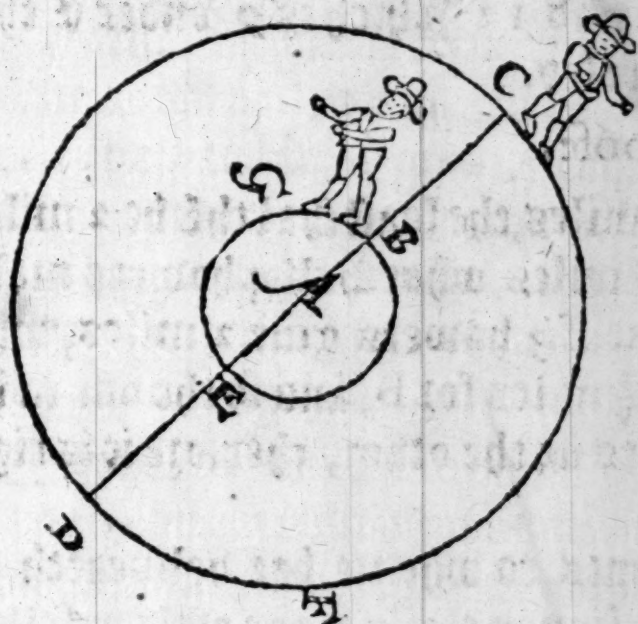
There are 4 young men drinkeing together, and play at tables for the wine, euery game one peny, and after they had playd a litle space, they find that A had lost most of the rest, wherevpon he payeth a quart of wine of 5 d vpon y<sup>e</sup> reckoning, & he sides that he findeth himselfe to haue yet lost 13 times as much more as B, that had lost least of them al, & C had lost 2 d more then B, and D, was 4 d lesse indebted then A, at the last they playde againe, who should pay all, the shot, nowe it falleth out that B, (which at the first was least indebted,) must pay for all, & the whole sum was, (besides that 5 d that A had paid before vpon the reckoning) made 27 d, the questiō is how much ech of the at y<sup>e</sup> first should haue paid, say y<sup>e</sup> A was indebted in al 1 £, out of the which substract 5 d, which he payd in money, & the rest wil be 1 £ - 5 d, which is thrice so much as B was indebted & wil make 1 £ - 5 for the which B was indebted, wherunto add 2 d,

3 that C, had lost more then B, then the debte will bee 1 £ - 1, & D was 4 d lesse indebted then A, therefore hee was

## The pathway to knowledge.

indebted  $1 \frac{1}{2} \text{ E} - 4 \text{ d}$ , which 4 productions make together  $2 \frac{2}{3}$   
 $\frac{1}{2} \text{ E} - 10 \frac{1}{3} \text{ d}$ , like  $27 \text{ d}$ , and  $1 \frac{1}{2} \text{ E}$ , is like  $14 \text{ d}$ , for A, losse, and  
 $3 \text{ d}$ , for B,  $5 \text{ d}$  for C, and  $10 \text{ d}$  for D.

There are 2 circles in one place, and one man is upon the  
 greatest circle in C, and goeth on the right hand, & compasseth  
 it about in 12 howers, and vnder him vpon the other circle in  
 B, there is another man which at the same time, & in the same  
 proportiō as the first doth on the left hand, compasseth it about  
 in 3 howers, the question is in how many howers they shall be  
 one vnder the other, saye they bee one vnder the other, in  $1 \frac{1}{2} \text{ E}$



howers, & say if 12 howers  
 be the compasse of the grea-  
 test circle, what shal  $1 \frac{1}{2} \text{ E}$  be  
 facit  $\frac{1}{12} \text{ E}$ , for the letter C,  
 if 3 howers be the compasse  
 of the smallest circle, what  
 shal  $1 \frac{1}{2} \text{ E}$  howers facit  $\frac{1}{3} \text{ E}$ ,  
 which ad vnto  $\frac{1}{12} \text{ E}$ , facit  $\frac{5}{12} \text{ E}$ ,  
 like vnto all the compas  
 that C can do in 12 howers,  
 therefore deuide  $1 \frac{1}{2} \text{ E}$  all the  
 compasse, by  $\frac{5}{12} \text{ E}$ , & it ma-

keth  $2 \frac{2}{3}$  of an hower in which space they shal bee right vnder  
 one the other.

Prooffe,

Say that the greatest circle is in cōpasse 8 miles, that of  
 C, shall then in  $2 \frac{2}{3}$  howers goe,  $1 \frac{2}{3}$  miles, and the smallest cir-  
 cle shal then goe 2 miles (for that if he in the greatest circle goe  
 in 12 howers 8 miles, then he in the smallest must goe in 3 how-  
 ers, 2 miles, then say if in 3 howers he goeth vnder the greater  
 circle, 8 miles, how much shall he goe in  $2 \frac{2}{3}$  howers, facit  
 $6 \frac{2}{3}$  miles, vnder the greatest circle, which ad to  $1 \frac{2}{3}$  miles that  
 C doth go, it maketh 8 miles for the greatest circle as before,  
 There are 2 men, & one in C, which goeth on the right hand, &  
 cōpasseth & circle in 12 howers, the other in B, goeth likewise  
 on the right hand, & compasseth the circle in 3 howers, & they

## The pathway to knowledge.

goe both one pace, & in one proportion, the question is, in what time they shall come one vnder the other, in y<sup>e</sup> same order they were before their going out first facit, multiplie 12 by 3, it maketh 36, which deuide by 9, the difference betwene 12, and 3, it maketh 4 howers, wherein they shall come againe one vnder the other, now if you will know in what place of the circle they shalbe vnder one the other, then deuyd the 4 howers in 12 they make  $\frac{4}{12}$ , or  $\frac{1}{3}$  part of the circle, distant from the place where they stood first, after that they haue gon 4 howers, or take the time of the smallest circle which is 3 howers, & set that aboue, and the difference betwene 3 and 12 which is 9 vnder & then it will be  $\frac{1}{9}$  or  $\frac{1}{3}$  part of the circles.

Prooffe.

Say the greatest circle is 8 miles, the least shal the be 2 miles, then say if 12 houres make 8 miles, what shall 4 howers make, facit  $2\frac{2}{3}$  miles for C, then say if 3 howers giue 2 miles, what shall 4 howers giue, facit  $2\frac{2}{3}$  miles for B, and so the one in his circle hath gon so many miles as the other, therfore it is right proued.

A marchant hath 2 seruants, to whome hee deliuereth together the value of 300 £, in linnen cloth, & one of them selleth his part, and leeseeth therein with his charges the  $\frac{1}{5}$  part of that he had receiued of his maister, & for the rest he buyeth spices & gaineth by them 42 £, the second selleth his linnen cloth, and gaineth  $\frac{1}{5}$  part of that he had receiued from his maister, out of the which he spendeth 12 £, & when they come home, they both deliuer vnto their maister y<sup>e</sup> somme of 330 £, the question is for how much money in cloth each of the receiued of their maister, say that the first receiued 1 £ pounds, out of the which take  $\frac{1}{5}$  there resteth  $\frac{4}{5}$  £ whereunto ad 42, that he gaineth againe it maketh  $\frac{4}{5}$  £ + 42, that he brought his maister home, for the second, say he had of his maister 300 £, — 1 £, wherunto ad  $\frac{1}{5}$  which he gayned it maketh 375 £, — 1 £, out of the which take 12 that he spent, there resteth yet 363, — 1  $\frac{1}{5}$  £, which ad vnto the  $\frac{4}{5}$  + 42 £, it maketh 405 —  $\frac{1}{5}$  £ like 330 £, & 1 £, shall bee like 200 £, for the value that the first receiued of his maister,

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maister, which substract from 300 £, resteth 100 £, for the value that the second receiued, which proue as followeth.

200	175	217	That is 200 £, receiued 25 £ lost, then agayn 42 £ gaind in spice, so he bzought 217 £, to his maister.
25	42	113	
175	217	330	

100	125	This 100 £, receiued 25 £, gaind 12 £ spēt, so hee bzought his maister home 113 £, which ad to 217 £, maketh 330 £.
25	12	
125	113	

A marchant hath a somme of money wherewith he traffiqueth to Danske, & gaineth with 100 £, as many pounds as he had in stocke at the first, after that he traffiqueth with the gaine of his stocke only to Hamborow, & he gaineth with a hundred pound as much money as he gayned at Danske, and in the end he findeth to haue gayned in all 16 £, 3 s,  $\frac{1}{2}$ , the question is how much he had at y first, say he had 1 £ pounds, so much gaineth he also at Danske by the 100 £, therefore the gaine shalbee at Danske

1 £, with y same he traffiquett to Hamborow, & gaineth 1 £ 100 | by 100 £, therefore say if 100 £, at Hamborowe | 100  
gaine 1 £ what shall 1 £ gaine, it maketh . 1 £ £ like

100	100	1000000
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16 £ 3 s  $\frac{1}{2}$ , or 1 £ £ shalbee like 810000, extract out of each part y  $\sqrt{\text{£ £}}$  it maketh 1 £, as 30 £, so much had he at y first.

A marchant hath lent vnto a man 300 £, for 12 per Cent. interest by the yeare, and he that receiueth the money letteth the marchant a house, vpon condition that if he payeth him not his 300 £, at the end of a yere, with the interest, that he shall likewise receiue, the like interest of 12 per Cent. vpon his house rent, and income, now at the end of foure yeares, the income, & rent of the house with the interest of 12 per Cent. amount to y somme of 300 £, the questiō is for what price the house was let by the yere, first seeke how much the 300 £ wil make at 12 per Cent. in 4 yeares, & it maketh 472 £, 8 7 2 so much also must the house rent with the interest 15625 make at the end of 4 yeres, therefore say that the house rent was one root yeres, which

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which gaineth nothing the first yere, because that there was no rent due vnto him till the yere was past, the first yere being past, then the house rent must come vpon interest, as 1 £ li, &

12 li,

shall make, 1 ————— for the somme to bee payd the seconde

100

2544

yere, which at the end of 3 yeres maketh 1 ————— £, which he the must pay, which after 12 per Cent, 10000 an other

404928

yere will make the somme of 1 ————— £, which is to

1000000

be payd the fourth yere, ad these 4 productions together, they

• 779328

872

shall make in all 4 ————— £ which are like 472 —————

1000000

15625

and 1 £ shall be like 98 li, 15 s, 6 d, 37778 for the price that y house was let, 74677.

A marchant hath 20 li, how much money shal an other man haue that as they 2 adding their moneys together, there maye be as much as it would make if they multiplied their sommes together, say 1 £, the which add to 20, it maketh 20 + 1 £, then multiplie 1 £ by 20, it maketh 20, £ as 20 + 1 £, and one £ is like 1  $\frac{1}{2}$  li, so much money the second man had.

A marchant buyeth Rie for 36 s the quarter, for how much must he sell it againe, that he may gaine by 120 li, that he had imployed, as much as he receiued for a quarter, say that he selleth the quarter for 1 £ li, and say if 36 s be 1 £, howe much shall 120 li be facit, 3  $\frac{1}{2}$  £, which are like 120 + 1 £ (for hee desireth to gaine by 120 li, as much as he selleth y quarter for,) & one roote shalbe like 51 s,  $\frac{3}{4}$  that he sould y quarter of rie for.

A marchant hath bought 7 yeads of cloth, 8 ells of damaske, and 9 yeads of sattyn, altogether for 74 li, and of the same hee hath sold 5 yeads of cloth, 4 ells of damaske, and 6 yeads of sattin, for the somme of 47 il, and y yead of cloth cost him 4 li, the question is what the damaske and the sattin cost the ell, and the yead each of them, say y elle of dammaske cost 1 £, which

mul-

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multiplie by 8 ℥, it maketh 8 ℥, then multiplie 7 peardes of cloth by 4 li, it maketh 28 li, which ad to 8 ℥, it maketh 8 ℥ + 28 li, for the value of y 7 peardes of cloth, & 8 ells of damaske, which subtract out of 74 li, there resteth 46 li, — 8 ℥, for the value of 9 yards of sattin, which will be about 5 li  $\frac{2}{3}$  —  $\frac{8}{3}$  ℥ y peard, & the 5 yards of cloth were sold for 20 li, the 4 ells of damaske for 4 ℥ li, and the 6 yards of sattin for 30  $\frac{2}{3}$  li, — 5  $\frac{1}{3}$  ℥, ad these 3 together, it maketh — 50  $\frac{2}{3}$  — 1  $\frac{1}{3}$  ℥ like vnto 47 or 1  $\frac{1}{3}$  ℥ + 47, like 50  $\frac{2}{3}$  & 1 ℥ shalbee like 2  $\frac{1}{4}$  so much did the peard of damaske cost, then it followeth that the elle of damaske cost 2  $\frac{2}{3}$  li.

If 6 ells of blacke, 5 ells of red + 11 li, cost as much as 9 ells of blacke, and 3  $\frac{1}{2}$  ells red + 4 li, at the same price shal 8 ells blacke, & 7 ells red — 5 li, cost as much as 6 ells blacke & 5 ells red + 9 li, the question is how much an elle of blacke and an elle of red shall ech of them cost, compare together first the two first parts they shall make 1  $\frac{2}{3}$  ells, red + 7 ℥, like as 3 ells of black, then compare the two other parts it will bee 2 ells blacke + 2 ells red like 14 ℥ or 1 elle black + 1 elle red, shalbe like 7 ℥, and for that it is all readie found, that 1  $\frac{2}{3}$  ells red + 7 ℥, are like 7 ells blacke, and 3 ells red, therefore you must take in heed of 7 ℥, 1 ell blacke, + 1 elle red, & ad them to 1  $\frac{2}{3}$  ells red, it maketh 2  $\frac{2}{3}$  ells red, + 1 blacke like vnto 3 ells blacke, subtract one each part, 1 elle blacke, there will rest 2 ells blacke, like 2  $\frac{2}{3}$  ells red, deuide each by 2 it maketh 1  $\frac{1}{3}$  elle red for one ell blacke, & because it is found before that one elle blacke, & one elle red are worth 7 ℥, therefore say, by the rule of 3, if 2  $\frac{1}{3}$  ells cost 7 ℥, what shall one ell of red cost, facit 3 ℥, now to find out, how much an elle of blacke cost, you know that before it was found, y 1  $\frac{2}{3}$  ells red + 7 ℥, are worth 3 ells blacke, therefore the 1  $\frac{2}{3}$  ells red, at 3 ℥ the elle amount to 5 ℥, which ad to 7 ℥, maketh 12 ℥ like 3 ells black, then say by the rule of three, if 3 ells black cost 12 ℥, what shall one ell cost, facit 4 ℥, then answere to your demaund.

A marchant buyeth 8 ells of cloth being 2  $\frac{1}{4}$  broad, & putting the same into the water it shrinketh so that he maketh of 3 ells  $\frac{3}{4}$  but 3 ells  $\frac{3}{4}$  in length & in breadth being 2  $\frac{1}{2}$  it maketh but

## The pathway to knowledge.

2 ells  $\frac{1}{2}$  the buyeth he an other sort of cloth being 1 ell  $\frac{1}{2}$  broad, and when it is wet, it is no broader then 1 elle  $\frac{1}{2}$ , and y length (being 6 elles,) but 5 elles  $\frac{1}{2}$ , the question is how many ells of cloth he shall take, to line the first 8 elles, say if 3  $\frac{1}{4}$  elles be 3  $\frac{3}{5}$ , what shall 8, facit 192 in length, that it was when it was wet and shronke, say 25 againe if 2 elles  $\frac{1}{2}$  be 2  $\frac{1}{2}$  elles, what shall 2  $\frac{1}{4}$  be, facit  $\frac{21}{10}$  the breadth as it was made & then shronk,  $\frac{192}{25} \times \frac{21}{10}$  facit  $\frac{4012}{250}$  ells in breadth & length for the first cloth, after it shronke, then say that the second clothes in length are 1 ells and say, if 6 elles be 5  $\frac{1}{4}$ , what shall 1 ells, facit  $\frac{7}{8}$  ells in length as it is shronke, and 1  $\frac{1}{2}$  elle broad as it is wet, and shronke,  $\frac{7}{8}$  ells  $\times \frac{1}{2}$  facit  $\frac{7}{16}$  ells, breadth and length like  $\frac{4012}{250}$  ells, and 1 ells is then like 12  $\frac{7}{16}$   $\frac{5}{2}$ , elles that hee must take of the second clothe before it was wet, and when both y clothes shalbe wet and shronke, then the first 8 elles in breadth and length, be as much as these last 12  $\frac{7}{16}$   $\frac{5}{2}$  elles, which yon may proue.

Three marchants are in a companie the first hath put in 14 l, lesse then the second, & y second & third put in together 148 l, and they haue gayned 42 l more then their stockes put in, of y which the first taketh 60  $\frac{20}{33}$  l, the question is howe much each man put in, and what they gained, also how much the seconde & third put in, set for the first 1 ells, the second must haue put in, 1 ells - 14, which take out of 148 l, there resteth 134 - 1 ells, for the third man, add all their three layinges in together, they make 1 ells + 148, whereunto ad 42 l, it maketh 1 ells + 190 l, for all their gaine, then say if 1 ells + 148 li, gaine 1 ells + 190, what shall 1 ells, facit 13 + 190 ells, which are like 60  $\frac{20}{33}$  or 18 + 129,  $\frac{13}{33}$  ells, shalbe like 60  $\frac{20}{33}$  ells + 8969  $\frac{23}{33}$ , or 18 + 129  $\frac{13}{33}$  ells, like 8969  $\frac{23}{33}$ , and by the second equation 1 ells, shal make 50 l, for the first mans stocke, whereunto ad 14 li, it maketh 64 li, for the second mans stocke, which take out of 148 li, there resteth 84 li, for the third mans stocke, so y all their stocks together make 198 li whereunto ad 42 li, it maketh 240 li, for all their stockes add gayne and then say.

If 198 win 240, what shall 50 li gaine facit 60  $\frac{20}{33}$  for the first

## The pathway to knowledge.

first mans gaine.

If 198 win 240 what shall 64 li gaine facit  $77\frac{1}{3}$ , for the second mans gayne.

If 198 win 240 what shall 84 gaine facit  $101\frac{1}{3}$ , for the third mans gaine.

A marchant buyeth 19 £.  $39\frac{1}{2}$  sugar, the tare vppon the hundredth 10 li, the hundredth cost net 30 li  $\frac{1}{2}$ , facit  $539\text{ li } \frac{7}{2}$ , the question is how many pound the hundredth is accounted to be. say if  $30\frac{1}{2}$ , be 1 + 10 what  $539\frac{7}{2}$  facit  $17\text{ £. } \frac{17}{8}$ , +  $176\text{ li. } \frac{1}{4}$  like vnto 19 £. +  $39\frac{1}{2}$  li, take out of each part  $39\frac{1}{2}$  li, there resteth 19 £. like  $17\text{ £. } \frac{17}{8}$ , +  $136\frac{1}{2}$  take yet out of each part,  $17\frac{1}{8}$  £. so shall rest yet  $1\frac{1}{8}$  £. like  $136\frac{1}{2}$  li, and one £ is 98 li,  $\frac{20}{17}$ .

Out of Simon Jacobs Booke.

A marchant buyeth 45 £. and 88 li Pepper, the tare is 12 li per Cent, and the £ cost 6 li  $\frac{1}{2}$  that is 274 li, the question is how manye pounce the £ is, accompted at, say that £ is 1 £, then worke as followeth, if 1 £ be 1 £, — 12, what is 45 £ + 88, facit  $45\text{ £} - 452\text{ £} - 1056$ , if 1 li net cost 1 £ —  $6\frac{1}{2}$  li, what  $45\text{ £} - 452\text{ £} - 1056$ , facit  $297\text{ £} - 2983\frac{1}{2}\text{ £} - 6969\frac{1}{2}$ .

1 £,                      1 £,

like 274 li or 274 £, like  $297 - 2983\frac{1}{2}\text{ £}$ , —  $6969\frac{1}{2}$  or 25, £ like  $2983\frac{1}{2}$  and 1 £ shalbe like  $129\frac{8}{11}\text{ £} + 303\frac{1}{11}$  and by the fourth equation, 1 £ shalbe 132 li, for the hundredth.

If 132 li, be 120 li, what  $34\text{ £} + 88$ .

$\frac{33}{11}$	$\frac{20}{10}$	$\frac{132}{748}$
		$\frac{528}{6028}$
		$\frac{10}{60280}$

Prooffe.

If 132 li. cost  $6\frac{1}{2}$  what shall 5480 net cost,

4	$\frac{33}{1}$	1096
		facit 274 li.

£ 3

Two

## The pathway to knowledge.

Two Marchants haue sould Pitch for 504 li. whereof B. hath sould 3 Tonnes more then A. Therefore A saith to B. I would haue sould all your Pitch for 288 li. and B saith to A. I would haue sould all your Pitch for 216 li. The question is, howe many tonnes each of them sould, and how much money each man receaued. Say that A hath sould 1,  $\text{£}$  tonnes, then B must haue sould 1,  $\text{£}$  + 3 tonnes, now seeke how much money each man receaued, saying, if 1,  $\text{£}$  + 3 giue 288 li. what shall one roote tonnes of A giue, facit, 288  $\text{£}$  for A moneys,

$$1\text{£} + 3.$$

then say if 1,  $\text{£}$  tonnes giue 216 li, what shall 1  $\text{£}$  + 3 tonnes giue, facit 216  $\text{£}$  + 648 li, for B. which 2 productiōs ad together they make 1  $\text{£}$ ,

$$504\text{£} + 1296\text{£} + 1944\text{li.}$$

like vnto 504 li. or 504  $\text{£}$  + 1512  $\text{£}$ , 1  $\text{£}$  + 3  $\text{£}$ , like 504,  $\text{£}$  + 1296  $\text{£}$  + 1944 li. & 1  $\text{£}$ , shalbe like 9 tunns, for A, and 12 tonnes for B, which make together. 21 tonnes, for the which they receaued 504 li. whereof 9 tonne came to 216 li. and the 12 tonnes to 288 li.

Certaine Marchants make a company, and each man putteth in 150 times so many poundes as they are Marchants, & they gaine as much vppon the hundreth as they are number of Marchants, and nowe if you take  $9\frac{1}{2}$  out of the gaine, and ad  $9\frac{1}{2}$  to the gaine, and multiplie the one production by the other, there will be 1550 li. The question is, how many Marchants there are in this company, and how much they gaied, make 1,  $\text{£}$  for the number of Marchants, then each man put in 150 times so many poundes, which is 150  $\text{£}$  poundes, & all their sommes together make, 150  $\text{£}$ , and they gayne by ech 100 li. 1  $\text{£}$ , therefore the gaine will amount to in all their money 1  $\frac{1}{2}$   $\text{£}$ , out of the which take 9 li.  $\frac{1}{2}$  and add thereto 9 li.  $\frac{1}{2}$  it will make 1  $\frac{1}{2}$   $\text{£}$  — 9  $\frac{1}{2}$  and 1  $\frac{1}{2}$   $\text{£}$  + 9  $\frac{1}{2}$  which multiplie one by the other, they will make 9  $\text{£}$  — 361 like 1550 li. or 9  $\text{£}$

4

$\text{£}$  — 361 is like 6200 li. & 180 li. is like 729 li. take out of each the  $\sqrt{\text{£}}$ , it will make 1  $\text{£}$ , like 3, so many marchant were

The pathway to knowledge.

were they, then each man put in 450 li. then all their stockes  
was 1350 li, and they gayned 40 li.  $\frac{1}{2}$ .

FINIS.



*A newe and a most excellent Invention  
for the buying and selling of all sortes  
of Merchandizes in all places, and with all  
kinds of money; newly caluled and corrected, and  
brought to light; By Iulius Cæsar Pataui-  
nus, alias Germanus dictus,*



O the intent I be not to te-  
dious (frendly Reader) I will brief-  
ly shew vnto you how much vtilitie  
and profit this present rule of ciphe-  
ring may bring vnto you: for that I  
am sure, that you will iudge your  
selues, that it will be both profita-  
and needefull vnto you, for that it is  
a thing of much importance. And  
to the intent you may easlye vnderstand the same. I thought  
good to make vnto you this presēt briefe declaratiō: the which  
any person, if he haue but only a litle knowledg of cipheryng,  
may easily vnderstand. First, you shall note, that the first num-  
ber which beginneth at the number 1 continuing to the num-  
ber of 300. may serue vnto you for the number of anye sort of  
merchandise, as appeareth by this ensample. If you had sold  
or bought 40. quarters of wheate at 8. s. the quarter, desiring  
sodainely to knowe the summe of the value thereof, doe you  
goe downe to the 8. roome, vnderneath the 40. roome, begin-  
ning at the first roome, and the number that is found in the 8,  
roome, shall be the iust value: The which by this first ensam-  
ple is 320, & so many pounds be the said 40, quarters of wheate  
worth. And if the bargain be made with crowns, duckets, or o-  
ther kind of money, you shall make so many crowns, dukets, or  
or other kinde of money, and euen so you may proceede with  
the rest. And for the second ensample, if you haue sould or  
bought 35, elles of cloth or other commoditie, at 12 shillings  
the ell, goe you downewards to the 12, roome, vnder the 35,  
roome,



roome, and you shall find the iust price thereof, (viz.) 420, shillings for the price thereof. Such a rule shall serue you for all kind of merchandize which you shall buye or sell, with al kind of money: and according as it is sayd of wheate and cloth, e- so may it be said of all other kinde of merchandize: and according as it is said of the Pounds, Crownies, and Duckets, euen so you may make it serue to all kinde of money, If you are to account with pounds or with shillings, it shall be as appeareth by this ensample; 25. £ of silke, at 16 £. 4. s. the pound, come yee downe to the 16, roome, vnder the 25, roome, for the pounds; and for the shillings come downe onely to the 4 roome, and you shall find that the said 25, pounds of silke be worth 400 £, and 100 shillings, which make 5, £, the which being added to the 400, will make 405. You shall doe the like with other merchandises that shall passe through your hands. And this shall serue vnto you for a generall rule without making any further declaration.

*Soli Deo gloria in sempiterna secula, Amen.*

*Verbum Domini manet in eternum.*



*The keeping of a marchants booke af-*  
ter the Italian manner by Debitor and  
Creditor, and first an instruction to leade  
you vnto the same.



O keepe a booke well it is  
necessarye that you write  
in a Iornall or daies booke,  
all what soeuer you doe  
touching your affaires, and  
therein expresse how & in  
what manner you bargain,  
either for buying, selling, receiuing, paying, bat-  
tering, or deliuering wares whatsoeuer, specifi-  
ing the day and yeare, when it was done, with  
whome, what goods, what price, howe much,  
what colour, waight, measure, howe many ells,  
yards, or peeces, what marke, what number,  
& for what time, the wares are sold, or bought,  
also by whom they are bought, sold, receiued or  
sent away, with what number & markes, as you  
shall perceaue at larg in the Iornall, by diuers &  
seuerall examples, then you must transport all  
Debitors, Creditors, and wares whatsoeuer in-  
to the leager or booke of debts, leauing therein  
for each man, an accompt apart, as also of wares  
each

A direct order for the keeping

each severall kind of ware an accompt apart, that is the debtors, or the bought & received wares on the left side, & the Creditors or wares sold delivered or sent away on the right side, with the day and date when the payments is to be made, & at the end before the placing of your sommes of money, set the number of the folio, of the said leger, where the same is again to be found in the said booke, & then write the name of the Debitor or creditor in your Register, with the folio where the same is to found in the leger, then in the margin of the Journall you must marke the folio or leaues where the same parcels are to be found in the leger, the hier figure for the Debitor & the lower figure for the Creditor, & betwene them both there must be a lyne made to part them one from the other, in this manner ——— Now if it fall out, that any accompt in the leger be so great, that you can write no more in the same place, then you must ballance the same accompt vp, that is make it an euē accompt with such a somme that there may be as much one the one side as one the other, & the same somme wherewith you haue so made them euē, or ballanced vp, must you carrie vnto a newe accompt and marke in your Register where

where the same standeth, that is in what folio it is, and likewise if you chaunce to write any percell false in your Iornall, you must not blot or crosse the same out, but you must write a contrarie percel vnto the same, that is if it were a debtor, make an other percel of the same as a creditor & so of other percels, likewise if you chace to transport any percell false out of your Iornall into the leager, that is either a debtor for a creditor, or a Creditor for a Debitor or any other percels vvrong placed, you must not crosse the same, but you must vwrite the like some on the other side against it, and doe as the order of the booke requireth, ther is likewise required a booke of charges, for your trade, vvherof you shal find a forme set downn at the end of my leager, some likewise vse a booke to vwrite therein the postage of letters, also for the copies of letters set to diuers places. Now whe you haue delt for a certaine time, and that your booke vvaxeth full, or that you meane to make a newve accompt, you must the make a ballace, out of the leger, vvich to do, you must first se that al the percels in your Iornall be transported into your leager, then ad euerie somme one both sides, that is the Debtors by themselves and the Creditors by themselves,

A direct order for the keeping

selues, and if there bee more found on the one side then on the other; then make the sommes on both sides alike, and carie the rest of that accompt vnto the ballance, that is if you haue any thing more on the right side, in the ballance, the like must you doe with the wares, you must add them vp on both sides, and what remaineth vnsould you shal carie it likewise on the right side, and set how many tonnes, peeces, or yeards, &c. they are, & rate them at such price as they cost you, or as the addition falleth out, and carie the same goods remaining vnto the ballance on the left side, then loke in your leager, what you find gained in the accompts of wares sould, & make the same accompts euen on both sides, carying the rest thereof vnto the ancount of profite and losse, which hauing done and that your whole leager is in this manner made eue in ech acount, and the remainors caried vnto the ballance, the must your ballace on both sides be euen and alike sommes, if your booke be true kept, That scene, then bring al the Debtors and Creditors out of the said ballance in the new boke marked with the letter B. referring your selfe in each part, vnto the ballance of the old boke marked with the letter A. there to find it at larg, (if neede be)

of a Merchants Booke,

be) that you may there see how the debt groweth, and then whatsoeuer yo doe after the balance made vp, write it in a Iornall, marked with the letter B, and transport the same percel ouer into the leager B. as you haue done out of the booke marked letter A. Thus if vvith this my labour, I may profit or pleasure any man, I shall thinke it vvell employed, vvherevvith I end this small treatise, commending the same vnto the censure of all such as are desirous, to learne for their ovvne profit and Instruction.

be what you may therefore how the debt grow-  
eth, and then what you do after the bal-  
ance made up, which is a formal, marked with  
the letter B, and marked with the same period over  
into the letter B, as you have done the end of the  
book marked letter A. Thus it is with this new  
edition, marked with the letter A, and marked with the  
same period over. As for the letter B, it is the  
continuation of all such as are before, in the  
other of the book and is the same.

ANNO DOMINI. (1596)

The Iornale or

Daies Booke, marked  
with this Letter

A.

Anno Domini 1596

Money to be first written in 1.

(1

li

$\frac{1}{2}$  Cash is Debitor unto Stock 2000 pounds and is for so-  
 $\frac{2}{2}$  much money remaining in Chest at this present God sen-  
ding fortune to deale with it.

2000 0 0

To writ in Debtors 2.

$\frac{1}{2}$  Petter Johnson is debitor unto Stocke 400 li. to pay  
 $\frac{2}{2}$  the 15 of this month by a Bill of his hand.

400 0 0

$\frac{3}{2}$  John Clauson is Debitor unto Stocke 600 li. and is  
 $\frac{2}{2}$  to be paid the last of January as by his bill appeareth.

600 0 0

To write Creditors 3.

$\frac{2}{3}$  Stocke is debitor to Petter Garetson 900 li. and is  
 $\frac{3}{3}$  for so much owe unto him by my bond the 20 of this mo-  
neth

900 0 0

$\frac{2}{3}$  Stocke is debitor to Gouer Janson 200 li. for so much  
 $\frac{3}{3}$  due unto him the last of Januarye

200 0 0

To write in Wares that are in the  
House at the beginning of your  
trade of merchandise.

$\frac{4}{2}$  Meale in Barrells is debitor to Stocke 736 li. and  
 $\frac{2}{2}$  for 16 Tuns at 46 pound the Tunne remaining in the  
House, which amounteth unto

736 0 0

W

The daies Booke.

The First of Iannarye 1596.

li. s. d.

4 Rye is debitor to Stocke 1540 pound, and is for 20  
2 Tunnes at 55 pound 10 shillings the Tun remaining  
in the house is

1540 0 0

4 Linnen Cloth is debitor to stocke, 310 pound 10  
2 shillings 0 pence, and is for eightene Peeces that re-  
maineth in the house, rated at 17 pound 5 shillings the  
Peece amounteth

310 10 0

To sell for ready money.

The 4 of Iannarye 1596.

1 Money is Debitor unto Rye 672 pound 0 shillings 0  
4 pence, and is for 8 Tuns Rye sold to Hans Croome at  
60 pound the Tunne ready money amounteth to

672 0 0

To sell for time.

The 8 of Iannarye 1596.

5 Nicholas de Reo is debitor to Rye 487 pound 4 shil-  
4 lings 0 pence and is for 6 Tunnes, Rye sold to him at  
58 pound the Tunne, to pay the last of this month

478 4 0

To sell for part mony and part time.

The 15 of Iannarye, 1596

5 Herman Janson is debitor to Rye 483 pounds 0 shil-  
4 lings 0 pence, and is for 5 Tuns, 20 Quarters, and 1  
Bushell Rye, sold to him at 60 pound the Tunne, to  
pay 83 pound ready money, the rest on the first of March  
next.

483 0 0

1 Money is debitor to Herman Janson 83 pound 0 shil-  
5 lings 0 pence, and is for so much receiued of him in re-  
dy money

830 0 0

The Daies Booke.

To receiue in a Debt.

1 Money is Debitor to Peter Janson, 400 li. 08. 00  
2 and is for so much received of him in redy Money 400 0 0

To pay a Debt.

The 20 of Iannarye 1596.

3 Peter Garretson is Debitor to money 900 li. 08. 00  
1 and is for so much paid unto him in redy Money 900 0 0

To pay a Debt by assignation, and to  
receiue the rest in ready Money.

The 31 of Iannarye 1596.

3 Gouert Janson is Debitor to John Clauson 200 li.  
3 and is for so much that I assigned him to receiue of John  
Clauson which he oweth me 200 0 0

1 Money is Debitor to John Clauson 400 li. 08. 00.  
3 and is for so much received of him in ready money 400 0 0

To prolong a Debt vpon intrest.

5 Michelaus de Reo is Debitor to proffit and losse 4 li.  
6 17 s. 8d. and is for the intrest of 487 li. 4 s. that he shold  
pay me this present day, and I haue given him time of  
payment untill the last of Februarye, for the which he  
must pay me 004 17 8

To lend Money.

The 4 of Februarye 1596.

6 John Seuenflapper is Debitor to money 300 li. and  
1 is for so much lent him in ready Money to pay the last of  
this Month 300 0 0

To buy for redy money.

4 Rye is Debitor to money 700 li. and is for so much  
paid in redy money to Michael Williamson for 10 Tunns  
of Rye bought of him at 50 li. the Tun amounteth unto 700 0 0

To buy for time.

The 10 of February 1596.

4 Rye is debitor to Peter Blome 770 li. 08. 00, and is  
7 for 10 Tunns Rye bought of him at 55 li. the tun to pay  
the 18 of February next 770 0 0

The daies Booke,

To ship goods to send beyond Seas,

The 24 of February 1596.

7  
4

Voiage to Lisborne is debitor to Rye 1500 li. 08.0 d  
and is for 20 Tuns laden for Lisborne in John Gerrit-  
son and directed vnto Hans Cardinall there to sell it for  
me, with all charges cleare aboꝝd the sum of

li

1500

When you cause any Goods to be assured,

The last of February 1596.

7  
1

Voiage to Lisborne is Debitor to Money 75 li. and  
is for so much paid vnto John Seuenlapper to assure me  
20 Tuns of Rye at 5. per cento, vnto Lisborne as by  
the polycie made appeareth

075

To deliuer Money vpon hazard.

The first of March. 1596.

7  
1

John Cleane is debitor to Money 210 li. and is for  
so much deliuered him vpon an aduenture of the Seas,  
which he must pay at Danske, vnto Hans Groen, and is  
the Summe of

210

7  
6

John Cleane is Debitor to profit and losse 30 li. and is  
for the profit of the said 210 li before specified which a-  
mounteth vnto

030

To buy Wares, part for money the rest  
to be payd by assignation.

The 4 of March 1596.

4  
8

Linnen Cloth is Debitor to Allart Scatter 500 li.  
08.0 d. and is for 25 Peeces at 20 li. the Peece bought  
of him which amounteth vnto

500

8

5

Allart Scatter is debitor to Nicholas de Reo, 492  
li 1 s. 8 d. and is for so much, I haue assigned him to re-  
ceiue of the said Nicholas de Reo, I say

492 1 8

8

1

Allart Scatter is Debitor to Money 7 li. 18 s. 4 d.  
and is for so much paid him in redy money

007 1 8

The Daies Booke,

The 15 of March 1596.

5 Nicholas de Reo, is Debitor to linnen Cloth 300 li. (4  
4 and is for 15 Peeces deliuered him in Barter at 20 li. li. s. d.  
the Peece amounteth to 300 0 0

4 Meale in Barrells, is Debitor to Nicholas de Reo,  
5 264 li. and is for 6 Tunnes receiued of him in Barter, at  
44 li. the Tunne amounteth to 264 0 0

1 Money is debitor to Nicholas de Reo, 36 li. 0 s. 0  
5 d. and is for so much receiued of him in redy Money, in  
payment of his Lynnen Cloth 36 0 0

To receiue Wares for a Debt, and to pay  
the ouerplus in money.

The 16 of March 1596.

4 Meale in Barrells is Debitor to John Seuenflapper  
6 360 li. 0 s. 0 d. and is for 8 Tunns at 45 li. the Tun,  
receiued of him in paiment of his debt 360 0 0

6 John Seuenflapper is debitor to money 60 li. 0 s. 0  
1 d. and is for so much paid vnto him for the ouer plus of  
his meale had of him. 60 0 0

To write in goods assured and lost at  
Sea, and to receiue Mony for them.

The 15 of Aprill, 1596.

6 John Seuenflapper is rebitor to Lisborne 300 li.  
7 for that I haue receiued a letter from thence that John  
Geratson in foull weather at Sea was forced to cast cer-  
taine goods ouer boord, wherof my part of the goods came  
vnto 300 li. which for that John Seuenflapper did as-  
sure it me I make him Debitor for it and is 300 0 0

7 he dayes Booke.

The 20 of Aprill 1596.

1 Money is Debitor to John Seuenlapper, 300 li.  
6 and is for so much receiued of him in redy money for  
goods that he assured I say

300 0 0

4 To barter for ware.

4 Rye is Debitor to Linnen Cloth 420 li. 0 s. 0 d, and is  
for 6 Tuns of Rye receiued by me of John Bloothoost  
in barter for 16 peeces of Linnen Cloth at 26 li. 5 s.  
the peece, and is

420 0 0

The last of Aprill, 1596.

6 Profit and losse is Debitor to Linnen Cloth 8 li.  
4 12 s. 8 d. and is for halfe a peece giuen to Peter Mart-  
son for the summe of

008 12 8

To take vp money at interest.

1 Money is Debitor unto John Claeson 400 li. 0. 0  
3 and is for so much borrowed of him at interest, to pay the  
last of December next

400 0 0

6 Profit and losse is debitor to John Claeson 16 li.  
3 and is for the interest of 400 li. I had of him to pay the  
last of December next.

016 0 0

To receiue a Debt after it is dewe with interest for it.

The first of may 1596.

5 Harman Johnson is debitor to profit and losse 8 li.  
6 and is for the interest of 400 li. for two moneths at 12  
per cento,

008 0 0

1 Money is debitor to Harman Johnson 408 li. and is  
5 for somuch receiued of him, dewe at March last which  
with the interest is

408 0 0

To enter money receiued by my factor  
that I deliuered at hazard.

The 8 of may 1596.

8 Hans Groen is debitor to John Cleyne 240 li. & is for  
7 somuch by him receiued at Danske of him, for so much  
I deliuered heere at hazard.

240 0 0

To enter money deliuered by my Factor  
vpon hazard.

The

2  
8

The dayes Booke,

The 15 of Maye 1596.

Petter Johnson is debitor to Hans Groen 240 li.  
and is for so much deliuered him at Danske to pay here,  
I say receiued

240 0 0

2  
6

Peter Johnson is debitor to profit & losse 22 li. 17. 2.  
and is for profit of mony.

022 17 2

To sell a debt,

The last of Maye, 1596

1

Mony is Debitor to Peter Johnson 258 li: 0s. 0d.  
and is his bill of 262 li. 17s 2d. that I haue sold for

258 0 0

2

redy monye vnto Jacob Garitson I say receiued

6

Profit and losse is debitor to Peter Johnson 4. 17. 2

004 17 2

2

& is for so much lost by selling his Bill for Mony.

To receiue goods and to sell it for another man.

The 4 of Iune 1596.

9  
1

Wheat for the account of Hans Kemmerling, is de-  
bitor to money 191 li. 15 s. 8 d. & for so much paid for 20  
tuns of wheate receiued for him out of Laurence Black.  
whereof the freight was 8 li. the Tunne. 172. 0 0.

Primage, the Tun 1 li. 1

1 12 4

Baken money, 1/2 per Tun.

0 10 12

Pilotage, 2 per Tun.

2 3 0

Measuring, 2 1/2 per Tun.

2 13 12

Custom, 3 1/2 per Tun.

3 15 4

Literidge, one day.

1 0 0

Cariage to ware house 7 s. per Tun.

7 10 8

191 15 8

191 15 8

9  
1

Albes for the account of Hans Kemmerling is debitor  
to money 37 li. 6 s. 0 d. and is for 7 Tun 10 Barrells  
receiued for his account out of Laurence Blacke, where-  
of the freight is at 5 li. the tun the sum of 33 11 7

Primage, 1 1/2 per Tun.

0 11 12

Baken money, 1/2 per Tun.

0 3 14

Pilotage, 4 per Tun.

1 11 5

Literage for a day.

0 12 0

Cariage to warehouse, 2 per Tun.

0 15 10

37 6 0

00376 0

To sell wares for parte money the rest for  
an other mans Bill.

The 8 of June 1596.

$\frac{2}{4}$  Peter Johnson is debitor to Rye 462 li. and is for 6  
Tuns of Rye sold him at 55 li. the Tunne. 462 0 0

$\frac{5}{2}$  Nicholas de Reo is Debitor to Peter Johnson 400  
li. and is for his bill received of the said Peter Johnson  
in payment of his Rye I sold him, I say 400 0 0

$\frac{1}{2}$  Money is Debitor to Peter Johnson 62 li. 0 s. 0 d.  
and is for so much received of him in money for the rest of  
his Rye he bought of me 062 0 0

To take vp money by exchange.

The 12 of June 1596.

$\frac{1}{3}$  Money is Debitor to Gouart Johnson 300 li. 0 s. 0  
d. & is for so much taken vp of him by Exchange at sight  
to be paid in Danske by my factor Hans Groen, unto  
Hans Cocke I say received 300 0 0

$\frac{6}{3}$  Profit and losse is Debitor to Gouart Johnson 2 li.  
5 s. 7 d. and is for 1 d. in the pound that I paid for bro-  
kerage to take vp the money 002 5 7

To deliuer money at interest.

$\frac{5}{1}$  Hans Johnson is Debitor to money 450 li. and is for  
so much deliuered unto him by exchange to pay at Dansk  
unto Hans Groen at sight. 450 0 0

$\frac{5}{6}$  Hans Johnson is debitor to profit and losse 10 li. 4 s  
8 d. for the profit of my money I deliuered him 010 4 8

To loase a debt by a bankrowt.

The last of June 1596.

$\frac{1}{3}$  Money is debitor to Nicholas de Reo 300 li. and is  
for so much received of me 300 0 0

The Daies Booke.

6 Profit and losse is debitor unto Nicholas de Reo,  
5 100 li. and is for so much given him when he brake, I  
say

100 0 0

To enter money gotten by money paid.

The first of Iuly 1596.

1 Money is debitor to profit & losse 10 li. for the pro-  
6 fit of 200 pistolets sol, for money.

010 0 0

To enter goods sold by y<sup>r</sup> factor at

Lisborne vpon aduice receiued.

The 8 of Iuly 1596.

10 Hans Cardinall is debitor to Cloage of Lisborne,  
7 1560 li. and is so much he hath sold his Rye for that I  
sent him, free of all charges the summe of

1560 0 0

To enter goods receiued from your factor.

The 12 of Iuly 1596.

10 Safferon is debitor to Hans Cardinall 1420. and is  
10 for 4 Balles wainig, viz. no. 1, 78 li. no. 2, 79 li. no. 3,  
83 li. and no. 4, 84 li. all is 324 li. which cost all the  
summe 1420 li. receiued from him out of Lisborne.

1420 0 0

10 Safferon is debitor to money 12 li. 0 s. 0 d. and is  
1 for so much paid for fraught thereof

0012 0 0

To enter goods lost at Sea.

The 22 of Iuly 1596.

6 Profit and losse is debitor to Hans Cardinall 140 li.  
1 and is for 1 Balle of pepper sent by him from Lisborne  
in John paen which was taken at Sea by Routers.

140 0 0

To enter money by exchange,  
payd by my Factor.

The 14 of August 1596.

3 Court Johnson is debitor to Hans Greene 302 li.  
8 5 s. 7 d. and is for so much payd Hans Cocke his man,  
which I tooke by per exchange. heere

302 5 7

32

To

The Daies Booke.

To enter money by exchange  
received by my factor.

The 20 of August 1596.

8 Hans Greene is debitor to Harman Johnson 460 l.  
5 4 s. 8 d. and is for so much received by him of that I de-  
livered by exchange to be paid there

460 4 8

To enter a Bill of exchange received  
for another mans accompt.

2 Peter Johnson is debitor to Hans Groen 600 li. &  
8 is for a bill of exchange that I haue received from the  
sayd Hans Groen for his owne accompt, payable by the  
sayd Peter Johnson which I make him debitor for

600 0 0

1 Money is debitor to Peter Johnson 600 li. and is  
2 for so much received of him

600 0 0

To sell Goods for another man for part  
money and part time.

The 15 of September 1596.

8 Allart Scatter is debitor to Wheate for the accompt  
9 of Hans Kemering 2364 li. 8. 14. for 20 Tuns sold  
him at 80 li. the Tun, to pay 1500 li. ready money, and  
the rest the last of October next

2364 8 14

1 Money is debitor to Allart Scatter 1500 li. and is  
8 for so much received of him in money,

1500 0 0

To sell goods to pay a Debt.

The last of September 1596.

7 Peter Bloome is debitor to Ashes for the accompt  
9 of Hans Kemering 496 li. and is for 7 Tuns 9 Bar-  
rells sold him at 64 li. the Tun

496 0 0

To recon with a workeman and  
to pay him money.

The 15 of October 1596.

4 Lynnen Cloth is debitor to Lambert Root 16 li. &  
10 for so much owe unto him for his worke about the same  
Cloth.

016 0 0

Lambert

The daies booke.

10 Lambert Root is debitor to money 16 li, and is for  
1 so much payd him in full payment

To enter goods sent by Sea for ano-  
ther mans accompt.

11 Hans Kemmerling is debitor to Gaffers 785 li, and  
10 is for 2 balles way ing no. 1, 78 li, and no. 2, 79 li, all  
is 157 li, at 5 li, the li, is 785 li. sent him by Noris Al-  
bants ship,

To enter money received for  
another man.

The 1 of Nouember 1596.

1 Money is debitor to Allart Scatter 864 li, 8 s. 14  
8 received for him

To enter charges payd for wares for  
another mans accompt.

The 15 of December 1596.

9 Wheat for the accompt of Hans Kemmerling is de-  
1 bitor to money 24. 6 10. for charges payd as followeth  
for measuring

002 2 5

for carriage by porters to ware house.

3 19 3

Ware house hyer,

17 4 0

Brokerage.

1 1 2

24 6 10 024 6 10

The 16 of December 1596.

9 Ashes for the accompt of Hans' Kemmerling are debi-  
1 tor to money 2. 15. 0. for so much paid for charges of  
the same as followeth.

for sellerige.

02 7 0

Brokerage.

00 8 0

2 15 0 002 15 0

4 Rye is debitor to money 47 li. 5 s. & is for charges  
1 paid for the same as by my Booke of charges fol.  
appeareth

20475 0

The daies booke,

6 Profit and losse is debitor to Money 350 li. and is  
 1 for diuers charges payd from the first of January 1596  
 unto this day as in my Booke of charges in folio

350 0 0

To enter money lost by the keeping  
 of the chest.

The last of December 1596.

6 Profit and losse is debitor to Money 14 li. 16 s. for so  
 1 much lost by payments of Money by reason of falling  
 and rising.

14 16 0

(1596.)

The Leager, or Booke  
OF DEBITOR AND CRE-  
ditor Marked with  
this Letter

A



The register vnto the Leager.

<b>A</b>		<b>O</b>	
Allart Scatter fol.	8		
Albes for Hans Kemer-		<b>P</b>	
ings account fol.	9	Peter Janson fol.	2
		Peter Garretson fol.	3
<b>B</b>		Peter Bloome fol.	7
<b>C</b>		<b>Q</b>	
Cash in fol.	1		
Stoche in fol.	2	<b>R</b>	
<b>D E I</b>		Rye fol.	4
<b>G</b>		<b>S</b>	
Gouart Johnson in fol.	3	Scatter on fol.	1
<b>H</b>		<b>T</b>	
Harman Johnson fol.	5	Meale in tuns fol.	4
Hans Greene fol.	8	Wheat for the account of	
Hans Cardinall fol.	10	Hans Kemerling fol.	9
Hans Kemerling fol.	11	<b>V</b>	
<b>I</b>		Voilage to Lisborne fol.	7
John Clauson fol.	3	<b>W</b>	
John Seuenkapper fol.	3	Winning or loosing fol.	6
John Cleane fol.	7	<b>X Y Z</b>	
<b>K</b>			
<b>L</b>			
Linnen Cloth fol.	4		
Lambert Roote fol.	10		
<b>M</b>			
<b>N</b>			
Nicholas de Reo fol.	5		

(8)

The 1 of Ianuarie 1596.

	1	Money is Debitor 2000 li. for so much resting in Chest as by the accompt appeareth fol.							
	45	Received for Rye in Creditor fol.	2	2000	0	0			
	1	Received of Harman Johnson in Cr. fol.	4	0672	0	0			
	0	Received of Petter Johnson in Cr.	5	0083	0	0			
March,	31	Received of John Clauson in creditor fol.	2	0400	0	0			
	15	Received of Nicholas de Reo in Cr. fol.	3	0400	0	0			
	20	Received of John Seuenlapper in Cr. fol.	5	0036	0	0			
May.	31	Received of John Clauson in Cr. fol.	6	0300	0	0			
	1	Received of Harman Johnson in Cr. fol.	3	0400	0	0			
June.	31	Received of Petter Johnson in Cr. fol.	5	0408	0	0			
	8	Received of Petter Johnson in Cr. fol.	2	0258	0	0			
	12	Received of Gouart Johnson in Cr. fol.	2	0062	0	0			
July.	30	Received of Nicholas de Reo in Cr. fol.	3	0300	0	0			
	1	Received of profit and losse in Cr. fol.	5	0300	0	0			
August.	31	Received of Petter Johnson in Cr. fol.	6	0010	0	0			
September.	15	Received of Allart Scatter in Cr. fol.	2	0600	0	0			
November.	1	Received of Allart Scatter in Cr. fol.	8	1500	0	0			
			8	0864	0	14			
		Summet. 8593. 8. 14.							

The 20 of Iannary 1596.

	20	Money is Debitor for so much payd to Preter							
		Garetson, cr. fol.	3	0900	0	0			
Feb.	4	Payd to John Seuenflapper in cr. fol.	6	0300	0	0			
	0	Payd for Rye in cr. fol.	4	0700	0	0			
	28	Payd for the voiage to Lisborne in cr.	7	0075	0	0			
Mar.	1	Payd John Cleyne in cr. fol.	7	0210	0	0			
	4	Payd Allart Scatter in cr fol.	8	0007	18	3			
	16	Payd John Seuenflapper in cr. fol.	5	0060	0	0			
June.	4	Payd for Wheate for H. Kemering in cr. fol.	9	0191	15	8			
	0	Payd for ashes for H. Kemering in cre fol.	9	0037	6	0			
	12	Payd Harman Johnson in cr. fol.	5	0450	0	0			
July	12	Payd by Safferon in cre. fol.	10	0012	0	0			
Oct.	15	Payd Lambert Roote in cre. fol.	10	0010	0	0			
De.	15	Payd for Wheate for H. Kemering in cre. fol.	9	0024	5	10			
	16	Payd for Ashes for H. Kemering in cre. fol.	9	0002	15	0			
	0	Payd for charges of Rye in cre. fol.	4	0047	5	0			
	0	Payd for charges in cre. fol.	6	0350	0	0			
	0	Lost by Cash in cre. fol.	6	0014	16	0			
	0	For Ballance of this account in cr. fol.	11	5194	6	4			

Summe 8593. 8. 14

Ans.

(2)

Dec.

Summe 5700. II. 9.

June,

Summe 1724. 17. 2.

(2)

The 1 of January 1596.

	Stocke is debitor 2000 li. for so much remain- ing in chest in ready money, as in debitor fol.	1	2000 0 0
o	For so much owing by Peter Johnson in debi- tor fol.	2	0400 0 0
o	For so much owing by John Clauson in de. fol.	3	6000 0 0
o	For so much remaining in meale in debitor fol.	4	7360 0 0
o	For so much remaining in Rye in debitor fol.	4	15400 0 0
o	For so much remaining in linnē cloth in deb. fol.	4	310100 0 0
Dec. 31	For so much gained by this yeares account, all charges deductes, as in debitor fol.	6	114 1 9

Summe 5700. 11. 9.

Ian. 1	Peter Johnson is debitor for so much received of him in ready money, in debitor fol.	1	4000 0 0
May 31	For so much received for his bill solde for money in debitor fol.	1	2580 0 0
	For so much lost by his bill of exchange in debi- tor fol.	6	417 2
June. 8	For so much received of him by M. de Ro in debitor fol.	5	4000 0 0
o	For so much received in ready money in deb. fol.	1	0620 0 0
Aug. 31	For so much received of him in money in debi- tor fol.	1	6000 0 0

Summe 1724. 17. 2.

Ga 2

(3	1 <sup>st</sup> of January 1596.					
Dec.	31	John Clauson is debitor to pay the last of Januarie, as in Cre. fol. For so much owing to him, brought to ballance in creditor fol.		2	600	0 0
		Summe, 1016,0,0.		11	416	0 0
Janu.	20	Peter Gerritson is Debitor 900 li. for so much paid him in ready money in creditor fol.		2	900	0 0
		Summe, 900. 0, 0.				
Janu.	31	Gouart Johnson, is debitor 200 li. for so much assigned him to receiue of John Cladson Cre. fol.		3	200	0 0
Aug.	14	For so much paide him per exchange by Hans Greene, as in Creditor fol.		8	302	5 7
		Summe, 502. 5. 7.				

The last of January. 1596.

Apri.	30	John Clauson is creditor for so much payde by him to Stuart Johnson in Cre. fol. _____	3	200	0	0
		Received in ready money in Cre fol. _____	1	400	0	0
		Received in money in Cre. f. 1. _____	1	400	0	0
		Gained by him to receive the last of Decemb. fol. _____	6	016	0	0

Summe 1016. 0. 0.

Peter Gerritson is creditor 900 li. for so much owing unto him, to be payde the 20. of January, 1596. as in debitoz, fol. \_\_\_\_\_

2 900 0 0

Summe. 900. 0. 0.

June.	1	Stuart Johnson is creditor 200 li. for so much owing to him to pay the last of January, fol. _____	2	200	0	0
June.	12	For so much received of him per exchange, fol. _____	1	300	0	0
	0	For so much as he must haue for the exchange to creditoz fol. _____	5	2	5	7

Summe. 502. 5. 7

The 1 of January 1596.

Mar. 15 For 6 Tuns bought of Nicholas de Reo cr. fol.  
For 8 Tuns bought of John Seuendlapper cre-  
ditoz fol.

Summe 30, Aug. 1360. 0. 0.

Febr.	4	For 10 Tuns bought for money creditor fol.
	10	For 10 Tuns bought of Peter Blome cred. fol.
Apri.	20	For 6 Tuns bought for Linnen cloth credi. fol.
Dece.	16	For charges paid for the Rye in creditor fol.
	31	For so much gained by this account credit. fol.

Summe 46 Tuns. 3604. 4. 0,

Mar.	4	For 25 peeces bought of Allart Scatter cr fol.
Oa.	15	For charges upon thē to Lambert Roote cr. fol.
		For so much resting of them to ballance this account in creditoꝝ fol.

Summe 43 peeces. 958. 12. 3.

The last of December 1596.

4)

Deale is debitor 1260 li. for 30 Tuns remain-  
ing unsold carried to Ballance in de: fol.

11 1360 0 0

Summe Tuns: 30. 1360. 0. 0.

Ianu. 4

Rye is debitor 672 li. for so much received in  
ready money in de: fol.

1 672 0 0

8

For 6 Tuns sold to Nicholas de Reo in de: fol.

5 487 4 0

15

For 5 Tuns 20 qrs. 1 bushell sold to J. Johnson

0

in de: fol.

5 483 0 0

Feb. 24

For want of measure 6 quartes 3 bushells.

lunc. 8

For so much sent to Lisborne 20 tuns in de: fol.

7 1500 0 0

For 6 tuns sold Peter Johnson in de: fol.

2 462 0 0

Summe Tuns 46. 3604. 4. 0

Mar. 15

Linnen Cloath is debitor 300 li. for 15 peeces  
sold to Nicholas de Reo, in de: fol.

5 300 0 0

Apr. 20

For 16 peeces sold for Rye in de: fol.

4 420 0 0

30

For 1/2 peeces given away in de: fol.

6 008 12 8

De. 31

For the Ballance of this account for 11 1/2 pee-  
ces resting unsold, rated at 20 li. the pece in  
de: fol.

11 230 0 0

Summe peeces 43. 958. 12. 8.

(5

The 8 of January. 1596.

		Nicholas de Reo, is creditor 487. 4. 0 for Rye sold to him to pay the last of January. cr. fol.	4	487	4	0
Janu.	31	For so much he must pay for interest cr. fol.	6	004	17	8
Mar.	15	For Linen Cloth sold him cr.	4	300	0	0
June	8	For so much he must paye to Peter Johnson the 4 of June, fol.	2	400	0	0

Summe, 1192. 1. 8.

Janu	15	Harman Johnson is creditor 483 li. for Rye sold him to pay 83 li. money, the rest the first of March cr. to.	4	483	0	0
May	1	For profit for prolonging the time cr. fol. —	6	8	0	0
June	12	For so much delivered him per exchange to pay to Hans Groen cr. fol.	1	450	0	0
	0	For so much gotten by that exchange cr. fol. —	6	010	4	8

Summe 951. 4. 8.

The 4 of Marche 1596.

(5)

		Nicholas de Reo is debitor 492 li. 1 s. 8 d. for so much he paid to Allart Schatter deb. fol.	8	492	1	8
	15	For Deale bought of him in deb. fol.	4	264	0	0
	0	For so much receiued of him in money, deb. fol.	1	36	0	0
June.	30	For so much receiued of him in money, deb. fol.	1	300	0	0
	0	For so much giuen him in deb. fol.	6	100	0	0

Summe 1192. 1. 8.

Janu.	15	Harman Johnson is debitor 83 li. for so much receiued of him in money deb. fol.	1	83	0	0
May.	1	For so much receiued in money, deb. fol.	1	408	0	0
Aug.	20	For so much he paide W. G. by exchange, deb. fol.	8	460	4	8

Summe 951. 4. 8.

Bb

The last of April 1596.

		Profit and losse is creditoꝝ 8 li. 12 s. 8 d. for one			
		peece of Linnen cloth giuen away creditoꝝ. fol.	4	8	12 8
	0	For so much lost paide John Cladson credi. fol.	3	16	00
May.	31	For so much lost paide Peter Johnson credi. fol.	2	4	12 2
June.	12	For so much lost paide Couart Johnson credi. fol.	3	2	5 7
	30	For so much lost by Nicholas de Reo creditoꝝ. fol.	5	100	00
July.	22	For so much lost by Poper, creditoꝝ fol.	10	140	00
Dec.	16	For so much paide for charges credi. fol.	1	350	00
	0	For so much lost by money credi. fol.	1	14	160
	31	For the rest of this account carped to ballance in			
		creditoꝝ fol.	11	114	1 9

Summe 750. 12. 10.

Feb.	4	John Seuenflapper is creditoꝝ 300 li. for so much			
		dew to pay the last of Iannary credit. fol.	1	300	00
Mar.	16	For so much receiued in money, creditoꝝ. fol.	1	060	00
Apr.	15	For so much receiued for assured goods to Lisborne			
		is creditoꝝ fol.	7	300	00

Summe 660. 0. 0.

The last of January 1596.

(6

		Profit and losse is debitor 4 li 17 s. 8 d. for so much gained by Nicholas de Reo deb. fol.	5	4	17	8
Mar.	1	For so much gained by John Cladson deb. fol.	7	30	00	
May.	1	For so much gained by Harman Johnson deb. fol.	5	8	00	
	15	For so much gained by Peter Johnson deb. fol.	2	22	17	2
June.	12	For so much gained by Harman Johnson deb. fol.	5	10	4	8
July.	1	For so much gained by money deb. fol.	1	10	00	
Dec.	31	For so much gained by Rye deb. fol.	4	126	19	0
	0	For so much gained by Linnen cloth, deb. fol.	4	132	2	8
	0	For so much gained by boiage to Lisborne, de. fol.	7	285	00	
	0	For so much gained by Wheate for W. Kem. d. fol.	9	12	18	0
	0	For so much gained by Alhes for W. Kem. deb. fol.	9	3	4	0
	0	For so much gained by Safferon, deb. fol.	10	104	10	0

Summe 750. 12. 10.

mar.	16	John Seuenflapper is debitor 360 li. for so much receiued by Deale in debitor. fol.	4	360	00	
Apr.	20	For so much receiued of him in money deb. fol.	2	00	00	

Summe 660. 0. 0.

Bb 2

The last of September 1596.

(7)					
	Peter Bloome is creditor 496 li. for ashes, sold				
	him for Hans Kemmerlings account cre: fol.	9	496	0	0
Dec. 31	For the ballance of this account brought fol.	11	274	0	0

Summe 770. 0. 0.

Feb. 24	Voilage to Lisborne is cre: 1500 li. for 20 tuns				
	Rye sent thither in John Gerrits, assigned to				
	Hans Cardinall cre fol.	4	1500	0	0
	28 For so much payd John Seuenlapper for assu-				
	rance of the same Rye in cre. fol.	1	75	0	0
Dec. 31	For profit for this account in cre: fol.	6	35	0	0

Summe 1860. 0. 0.

Mar. 1	John Cleyne is debitor 210 li. for so much de-				
	livered him in money in cre: fol.	1	210	0	0
	For profit of the same in cre. fol.	6	30	0	0

The 10 of Februarye 1596,

Peter Bloome is debitor 770 li. for Rye to be  
payd the 18 of September deb. fol.

7)

4 770 0 0

Summe 770. 0. 0.

Apr. 15 Vioiage to Lisborne is debitor 300 li. for so  
much assured John Seuellapper and was lost and  
payd me as in deb: fol.

6 300 0 0

Iuly. 8 For Rye solde there as by letter from Hans  
Cardinall appeareth as in deb: fol.

10 156 0 0

Summe 1860. 0. 0.

May 8 John Cleyne is debitor 240 li. for so much re-  
ceiued of him, as in deb: fol.

8 240 0 0

Summe 240. 0. 0.

Bb iii.

(8)

The 4 of March 1596.

Allart Scatter is creditor 492. 1. 8. for so much payd by M. de Reo, cre. fol.

For so much payd in money cre: fol.

Sept. 15 For wheate solde him for H. Kemmerling to pay 1500 li. in money, theret the last October, 1596 in cre: fol.

5 492 1 8  
1 007 188

9 2364 8 14

Summe 2364. 8. 14.

May. 8 Hans Groen is creditor 240 li. for so much delivered J. Cleyne to pay him in cre: fol.

Aug. 20 For so much delivered Harmian Johnson to pay him cre: fol.

Dec. 31 For ballance of this account carried to cre: fol.

7 240 0 0

5 460 4 8

11 442 0 15

Summe 1142. 5. 7.

The 4 of March 1596.

		Allart Scatter is debitor 500 li. for Linnen cloth bought of him in deb: fol.	4	500	0	0
Sept.	15	For so much received of him in deb: fol.	1	1500	0	0
Nou.	1	For so much received of him in deb.	1	864	8	14

Summe 2864. 8. 14.

May	15	Hans Groen is debitor 240 li. for so much de- liuered Peter Johnson deb: fol.	2	240	0	0
Aug	14	For so much deliuered Gouart Johnson fol:	3	302	5	7
	31	For so much deliuered Peter Johnson fol.	2	600	0	0

Summe 1142. 5. 7.

(9)

The 4 of June 1596.

Wheate for the accompt of Hans Kemering is				
creditor 191 li. 15 s. 8. d. for charges paide for				
21. tunnes & 3 quarters, 2 bushels credit. fol.		1	191	15 8
Dec. 15	For charges paide for them more, creditor. fol.	1	24	6 10
31	For my factoring creditor fol.	6	12	18 0
0	For so much money I haue receiued cleere of all			
	charges solde Allart Schatter, creditor, fol.	11	2135	8 12

2<sup>1</sup> tuns. Summe 2364. 8. 14.

June. 4		Wheate for the accompt of Hans Kemering is cre-		
		ditor 37. 6. 0. for so much payd for the charges		
		of them as in creditor fol.		
		1	37	6 0
		For 7 tun. 10 barrels.		
Dec. 16	For more charges paide creditor fol.	1	2	15 0
31	For my factorage creditor fol.	6	3	4 0
0	For so much to ballance this accompt with, is			
	the rest dew to Hans Kemering as in cre. fol.	11	452	15 0

7 tuns. 10 bar. Summe 496. 0. 0.

1596.

Septēber. 15 Wheate for Hanse Kemerlings Account is Credito  
2364. 8. 14. for 21 tonnes  
3 quarters, sold Allart Shatter at 80 l. last, Debito  
fo. 8 2364 8 14  
for want of measure 10  
quarters 2 Bushels.  
21  $\frac{1}{2}$  tonnes Summe.  
2364. 8. 14

1596.

September. 30 Ashes for the Account of  
Hanse Kemerling is Credito  
496. 0. 0. for 7 tonnes 9  
barrell sold Peter Blomer at  
64 l. per Tonne, Debito  
fo. 7 496 0 0  
for want in it that I gaue 1  
Tonne.  
7 Tonnes, { Summe.  
10 barrell. { 496. 0. 0.

Et.

An. Dom. 1596. Fol.				10	£	8	8
July.	8	Hanse Cardinale is Debi-					
		tor 1560 li, for Uioage to					
		Lishborne Creditor Fol. —	7	1560	0	0	
		Summe. ——— 1560.0.0.					
July.	12	Saffron is Debi. 1420 li.					
		for 4 Bales receiued from					
		Hanse Cardinal weight 324					
		Creditor. ———	10	1420	0	0	
		For freight Creditor. —	1	12	0	0	
December.	31	For profit by the Saffron,					
		Creditor. Fol. ———	6	104	10	0	
		4 Bales.					
		Summe. ——— 1536.10.0.					
October.	15	Lambert Root is Debi-					
		tor 16 li. for so much payde					
		him in money Creditor. —	1	160	0	0	
		Summe. ——— 16.0.0.					

		1596	Fol.	10	2	5	0
Iulye.	12	Hanse Cardnall is Creditor 1420 li. for so much he sent in saffron Debitor. —	10	1420	0	0	0
	22	For losse in 1 bale sent and taken by sea Deb. —	6	140	0	0	0
		Summe. — 1560.0.0.					
October.	15	Saffron is Creditor 785 li. for 2 bales waight 1571. sent Hanse Kemerling Deb. fo. —	11	785	0	0	0
December.	31	For the callance of this account for saffron resting on sold 167 li. at 4 li. $\frac{1}{2}$ per li. 2 bales bozne to Deb. fo. —	11	751	10	0	0
		4 Bales. Summe. — 1536.10.0.					
		Lambert Root is Creditor 16 li. for worke done on linnen cloth Debitor fol. —	4	16	0	0	0
		Summe. — 16.0.0.					
		Et. 3					

		1596.	Fol.	l	s	d
		1596.				
October.	15	Hanse Kemerling is Debitoz 785 for saffron sent him by Ioris Isbrant 2 Bales, weight 157 lb. at 5 lb. the lb. Creditor, Fol. —	10	785	0	0
December.	31	For the ballance of this Account carried to Fol. —	11	180	3	12
		Summe, 2588. 3. 12.				
December.	31	Ballance of Account is Debitoz by these percels following founde by the shutting vp of diuers accompts, whiche to shut vp they are made Creditors in this Booke A. and are carried Debitors into the Booke B.				
	0	For somuch ready money in house, Creditor. —	1	5194	6	4
	0	For meale remayning 300 connes, Creditor. —	4	1360	0	0
	0	For linnen cloth remayning 11 peeces $\frac{1}{2}$ Creditor. —	4	230	0	0
	0	For Saffron remayning 167 lb. in 2 bales, at 4 lb. $\frac{1}{2}$ the pound, in Creditor. —	10	751	10	0
		Summe, —		7535	16	4

		1596.	Fol.	l	s	d
		1596.				
December.	31	Hanse Kemerling is Creditor 2135, 8, 12, for wheat sold for him Debitor f. s. —	9	2135	8	12
	o	For ashes sold for him Debitor f. s. —	9	452	15	0
		Summe, 2588. 3. 12.				
December.	31	Ballance of account is Creditor by these sommes following found by footes of accompts which to shuft vp they are made Debtors in this booke A. & from hence carried Creditors in y booke marked letter B. —				
	o	Due by Iohn Cleason Debitor f. s. —	3	116	0	0
	o	Due by Peter Blome 18 Sept. Debitor f. s. —	7	274	0	0
	c	Due by Hanse Groen Debitor f. s. —	8	442	0	15
	o	Due by Hanse Kemerling Debitor f. s. —	11	1803	3	12
	c	Due by stocke debt. f. s. —	2	4600	11	9
		Summe, —		7535	16	4
		This booke is balanced by and found to be true.				
		C c 3				

1890

The following is a list of the names of the persons who have been elected to the office of Justice of the Peace for the year 1900, in the several townships of the County of Cook, Illinois, at the election held on the 1st day of November, 1900.

1. The first part of the book is a general introduction to the subject of the history of the United States. It covers the period from the discovery of the continent to the present time. It discusses the early explorations, the settlement of the colonies, the American Revolution, and the formation of the United States. It also touches upon the early years of the Republic, the War of 1812, and the expansion of the country.

1000



1596.

The booke of Charges for the  
*trade of Marchandise,*  
which of some is called the  
Cashe Booke.

(::)

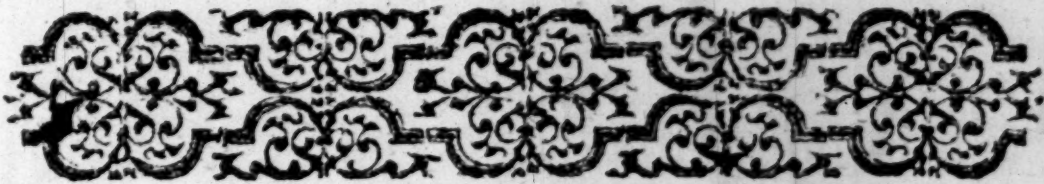


		1596	Fol. (1)	r	s	d
		1596.				
Januarie.	1	Rie for 20 tonnes in Iohn Isebrants chamber at 4 s the Tonne				
	8	For measuring 8 tonnes at 1 $\frac{1}{2}$ per tonne.		00	12	0
		For other charges as labo- rers and warehouse hier for a moneth.		01	19	0
		For brokeridge 1 per tonne is.		00	8	0
	6	For measuring 6 tonnes at 1 $\frac{1}{2}$ per tonne.		00	9	0
		For labozers &c.		00	5	4
		warehouse hier for a moneth at 4 s.		01	4	0
		for brokeridge at 1 per tun.		00	6	0
	15	For measuring 6 tonnes at 1 $\frac{1}{2}$ per tonne.		00	9	0
		For labozers &c.		00	5	4
		For warehouse for a moneth at 4 s per tonne.		01	4	0
		For brokeridge 1 per ton.		00	6	0
Februarie.	4	For brokeridge 1 per tonne for 10 tonnes.		00	10	0
		For literidge, drinking mo- ney, caridge vp, and other charges.		09	10	0
	10	For brokeridge of 10 tonne rie,		00	10	0
		For caridge vp, drinking mo- ney, literidge and other char- ges.		09	10	0
		Summe is		27	7	8
		caryed to Folio 2.				

		1596.	Fol.	l	s	d
Ianuarie.	5	For 4 reames of paper. —		13	4	0
	7	For a quart of inke. —		0	15	0
	0	For penes. —		0	5	0
	8	For 10 li. of candles. —		1	15	0
	20	For somuch giuen y <sup>e</sup> poore —		1	10	0
Februarie.	8	For charges to Antwarp. —		8	0	0
Aprill.	15	for wod for to make a tier. —		9	0	0
July.	24	For mending y <sup>e</sup> Stoue. —		2	10	0
October.		For rent of my house. —		80	0	0
		For charges in my house. —		224	0	0
		For charges of letters as in the booke appeareth. —		cc9	1	0
		This caried to the Iornall in Fo. 9. —		350	0	0
Februarie.	10	Rie is Debitor for charge laid out vpon it as in fol. —	1	27	7	8
	24	For carriage downe, mesu- ring, putting out, warehouse come, &c. of 20 tons rie. —		08	0	0
		For licheridge aboord —		02	0	0
Aprill.	20	6 tonnes rie caried to y <sup>e</sup> ware- house, which cost licheridge carying vp, and other char- ges. —		06	2	0
		For brokeridge. —		00	6	0
Iune.	8	For bzinging downe, mesu- ring, warehouse come, and brokeridge of 6 tonnes. —		03	9	8
		Summe of these 46, tonnes. —		47.	5.	0.
		Which I haue entered in the Iornall. fol. 9.				
		D d.				

THE  
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1597.

The Leager or booke of debts  
*marked vwith the letter*  
B.



D D 2.

THE TREATISE OF THE

1597

THE TREATISE OF THE

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# The Register of the leager, marked letter B.

A. B.	M.
C.	N.
Cash in folio, ——— 1 Stocke in fol. ——— 3	G.
D. E. F. G.	P.
H.	Peter Blome folio. ——— 2.
Hanse Greene. in fol. — 3. Hanse Kemerling, fol. — 3.	Q. R.
I.	S.
Iohn Clawson folio, ——— 2.	Saffron folio, ——— 2.
K.	T.
L.	Meale in Tonnes folio, — 1.
Linnen cloth folio, ——— 1.	V. W.
	X. Y. Z.
	D. 3.

		An. Dom. 1597.	Fol.	1	£	s	d
Januarie,	I	Money is Debitor to bal- lance of the booke A. the rest remaining in the chest as in fol.		11	5194	6	4
Januarie.	I	Beale is Debitor 1360 l, for 30 tonnes remaining in my house founde in bailance of the booke A. as in Credi- tor fol.		11	1360	0	0
Januarie.	I	Linnen cloth is Debitor 230 l, for 11 peces $\frac{1}{2}$ remain- ing in the house found in bal- lance of the Booke A. as in Creditor fol.		11	230	0	0

1597

Fol.

1

2

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1597

Fol. 2

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Ianuare,

I

Saffron is Debitor 75 l.  
10. 09. for 2 Bales weigh  
167 li. remayning in the  
house found in the Ballance  
in Creditor. —————

II 75 l 10 0

June.

1 John Clawson is Creditor  
to 416 l., for so much remaining  
unto him upon account as in the  
balance of the booke A. in Debi. fol.—

11 416 0 0

June.

1 Peter Blome is Creditor  
to 274 l., for so much remaining  
unto him upon account as in the  
balance of the booke A. in Creditor fol.—

11 274 0 0

Et



		An. Dom. 1597.	Fol.	3	£	§	ð
Januarie.	1	Hanse Groen is Creditor 442 £, 0 §, 15 ð, for so much remaining unto him vpo ac- compt as in ballāce in fo. —	II	442	0	15	
Januarie.	1	Hanse Kemmerling is Cre- ditor 1803 £, 3 §, 12 ð, for so much remaining unto him vpon accompt as in ballāce in fol. —	II	1803	3	12	
Januarie.	1	Stocke is creditor 4600 £, 11 §, 9 ð, for so much remain- ing as clere stocke al things deducted which I bring fro ballance in fol. —	II	4600	11	9	

1597.

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2

3

1. In the 1st line for 2, reads 10.  
 2. In the 2nd line for 2, reads 10.  
 3. In the 3rd line for 2, reads 10.  
 4. In the 4th line for 2, reads 10.  
 5. In the 5th line for 2, reads 10.  
 6. In the 6th line for 2, reads 10.  
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41. In the 41st line for 2, reads 10.  
 42. In the 42nd line for 2, reads 10.  
 43. In the 43rd line for 2, reads 10.  
 44. In the 44th line for 2, reads 10.  
 45. In the 45th line for 2, reads 10.

## Faultes escaped in the Printing.

C 1. in the 9 line for 20, reade 10.

C 3. in the 15 line for as many as ye can, reade, as many times as you can, in the same folio, the 19 line, for which set above the figure of 7, reade, set the 6, above the figure of 7.

C 4. in the 3 line for 59049. reade 59046. in the same fol. the 29 line, for the price in the whole bushell, reade, the price in the whole.

D 2. in the first line, for it maketh 18 s, and 8 d, reade, it maketh 25 s, 4 d, for the whole lesson is false cast vp.

D 3. in the 28 line for large reade long. in the same folio, in the 15 line, reade you must deuide by each of their denominators.

E 1. in the 7 line of the serond side, for this, reade, that.

E 2. in the 18 line, for 329 yeards, at 6 d, which maketh 9 l, 19 s, and it standeth 9 l, 18 s, 6 d.

E 3. in the 3 line of the second side, for 5 s, and 5 d, reade 5 s, and 1 d.

F 1. in the 7 line, for and you tell 40 ryalls for a pound, reade, & you tell 1000 pound by 40 ryalls for a pound.

F 4. in the 20 line of the last side for one, reade, and.

G 1. in the 3 line, for pounded, reade, propounded.

H 3. in the 24 line of the second fide, for  
12 pound, reade, 12 barrels.

I 1. in the 4 line, for sum, reade sonne.

I 1. in the 21 line of the second fide for  
dolor, reade, ducket.

I 2. in the 21, and 22, lines, for pounds  
and shillings, reade, liuers and sols.

I 2. in the second fide, the 16 line for  
315 franks, reade 315 sols.

FINIS.



2